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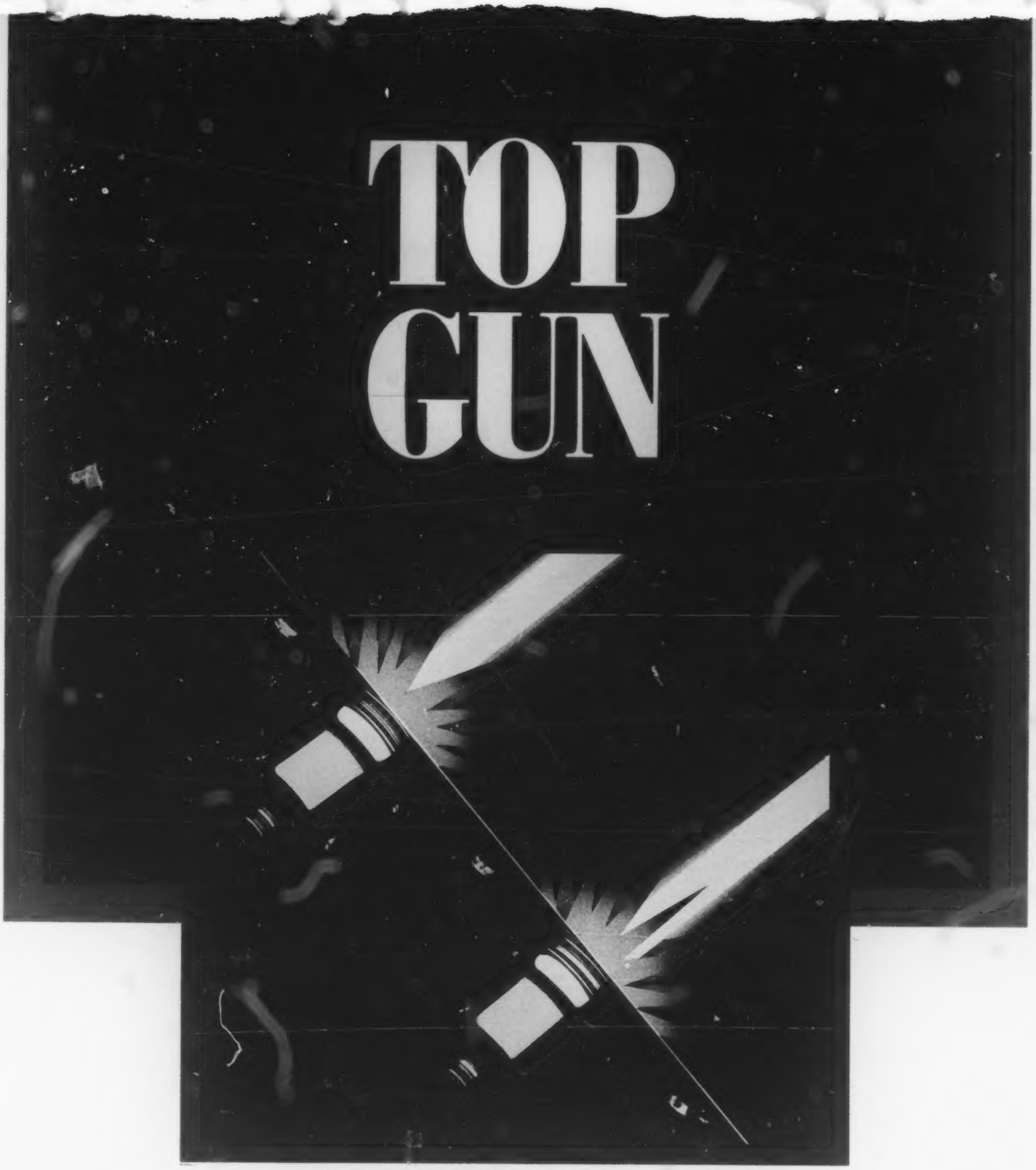
Petroleum Independent

Vol. 61 No. 8 September 1991

THE OIL & NATURAL GAS PRODUCING INDUSTRY IN YOUR STATE

1991-1992

INDEPENDENT PETROLEUM ASSOCIATION OF AMERICA



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Contents

1990 In Review 4

Energy's Number Man 5

EIA Expects Demand Boost 10

Statistical Summary

Oil Summary 11
Natural Gas Summary 12
Drilling Summary 13

Petroleum Statistics

United States 16
Alabama 18
Alaska 20
Arizona 22
Arkansas 24
California 26
Colorado 28
Florida 30
Illinois 32
Indiana 34
Kansas 36
Kentucky 38
Louisiana 40
Maryland 42
Michigan 44
Mississippi 46
Missouri 48
Montana 50
Nebraska 52
Nevada 54
New Mexico 56
New York 58
North Dakota 60
Ohio 62
Oklahoma 64
Oregon 66
Pennsylvania 68
South Dakota 70
Tennessee 72
Texas 74
Utah 76
Virginia 78
West Virginia 80
Wyoming 82

Reference Information

Abbreviations/Conversions 14
Data Sources 14
Advertisers' Index 112

Exploration and Drilling

Seismic Exploration Activity 84
Rotary Rigs Operating 85
New-Field Wildcat Wells Drilled 86
Exploratory Wells Drilled 87
Development Wells Drilled 88
Total Wells Drilled 89

Financial

Cost of Drilling & Equipping Wells 90
Crude Oil Revenues 91
Natural Gas Revenues 92
Drilling Summary 1989 93
Financial Statistics 93
Severance and Production Taxes 94

Production

Crude Oil Production by Chase Group 93
Producing Crude Oil Wells 95
Producing Natural Gas Wells 96
Crude Oil Production 97
Natural Gas Production 98

Stripper Wells

Stripper Well Production 99
Producing Stripper Wells 100

Prices

Crude Oil Wellhead Prices 102
Natural Gas Wellhead Prices 103
Wholesale Prices—Total U.S. 104
Wholesale Prices—East of California 105
Refiner Acquisition Cost of Crude Oil 106
Retail Gasoline Prices 106

Consumption

Petroleum Consumption 107
Natural Gas Consumption 108

Miscellaneous

World Crude Oil Reserves 101
Industry Employment—1990 109
State Rankings 110
Glossary 111
Peak Year Milestones 112

Industry Suppliers

Managing Quality 113

The Oil & Natural Gas Producing Industry In Your State

Vol. 61 **No. 8**

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The Oil & Natural Gas Producing Industry In Your State is published each September by Petroleum Independent Publishers, Inc. It is the special statistical issue of ***Petroleum Independent***, official magazine of the Independent Petroleum Association of America, (IPAA).

Members of IPAA receive one free copy of this issue; additional copies cost $20 each. Non-members of IPAA are charged $75 per copy. Complimentary subscribers (government, media and non-profit organizations) are entitled to one free issue; additional copies cost $20 each.

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Wholesale Oil Prices (monthly)
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Cover: Computer-enhanced photograph by Clay Huffman, Washington, D.C.

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Petroleum Independent (ISSN 0747-2528) is published monthly, except bimonthly in May-June and November-December by Petroleum Independent Publishers, Inc., 1101 16th St., N.W., Washington, D.C. 20036. This issue, September 1991. Second class postage is paid in Washington, D.C., and additional mailing offices. Subscriptions to Petroleum Independent are included in IPAA membership dues. Additional subscriptions are $60/year, payable to Petroleum Independent Publishers, Inc. Reasonable care will be taken with unsolicited manuscripts and photographs, but publisher cannot be responsible for safe return. Submissions must be accompanied by self-addressed envelope with sufficient postage. Postmaster: Send change of address to Petroleum Independent, 1101 16th St., N.W. , Washington, D.C. 20036.

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1990 in Review

Domestic Petroleum's Year of Challenge and Change

By Deborah Rowell
IPAA Vice President of Economics

The Persian Gulf conflict significantly affected petroleum markets during the second half of 1990. The loss of crude oil supplies from Iraq and Kuwait led to an almost immediate doubling of spot crude oil prices. The widespread anticipation of further losses in world supply added to the upward pressure on prices of crude oil and refined petroleum products.

It was not until early 1991 that oil prices began to fall—when the success of the bombing missions on Iraq became apparent. However, because the scope of this annual review is limited to 1990 statistics, the changes that occurred after the war ended will not be reflected in the data. New tables have been added for this edition, including Oil Revenues, Natural Gas Revenues and State Rankings.

U.S. wellhead crude oil prices averaged $20.03 per barrel in 1990, up 26 percent from the 1989 annual average of $15.85. During the last half of 1990, crude oil wellhead prices in the U.S. rose to as much as $36 per barrel because of the Persian Gulf conflict. Natural gas wellhead prices rose only slightly in 1990 to an annual average of $1.72 per thousand cubic feet (Mcf).

The increase in oil prices brought some much-needed relief to the domestic petroleum industry. Domestic drilling activity improved last year, with the rotary rig count reaching an annual average of 1,010 rigs. This is up 16 percent from the 1989 average of 869, which marked the modern-day low in rig activity.

The seismic crew count, one of the main indicators of future exploration activity, fell by five percent in 1990. There were 1,500 land and marine crew months worked during the year, down from 1,579 in 1989.

The latest available drilling estimates (as of publication date) indicate there were 28,337 total well completions in 1990, up two percent from the prior year. This is only about one-third the level of 1985, immediately before the oil price collapse of 1986. Annual well completions in the United States peaked in 1981 at 91,600.

U.S. crude oil production continued its downward spiral last year, dropping by 271,000 barrels per day. However, this 3.5 percent decline is only half the level of the 1988-1989 decline rate. Crude oil output averaged 7.4 million barrels per day (MM b/d) in 1990, the lowest annual average in more than 25 years.

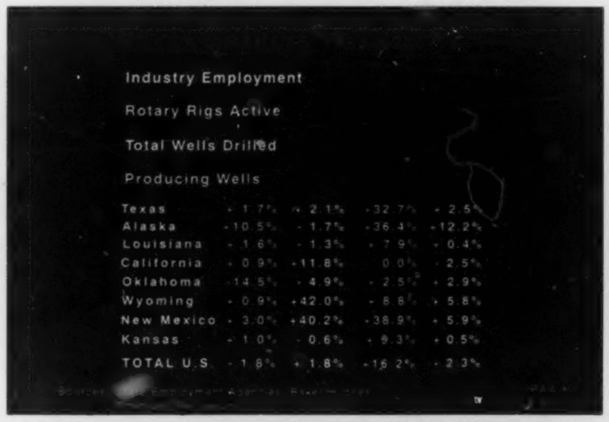
Since 1985, domestic crude oil production has fallen by more than 1.6 MM b/d or 18 percent. Alaskan output showed its first significant drop in 1989, with continued losses last year. Crude oil production in the lower 48 states plunged to 5.6 MM b/d, a level not experienced since 1950.

In contrast to crude oil, natural gas marketed production increased in 1990, to an average of nearly 18.5 trillion cubic feet (Tcf), up from 18 Tcf in 1989. Regulatory constraints and deliverability factors continue to be problems for the natural gas industry.

There were 587,762 crude oil wells producing at the end of 1990, which is 15,594 fewer wells than the year before. This is a result of the drilling collapse of the past few years, and the continued abandonment of marginal wells.

By contrast, the number of producing natural gas wells continued to climb steadily to 264,558 wells, up slightly from 1989. Although 1989 was the 23rd consecutive year a new record was set for producing natural gas wells, the rate of growth slowed dramatically from the nine percent gain made in 1985.

Meanwhile, the amount of severance and production taxes paid by the domestic petroleum industry increased to $4.6 billion in 1990. The total, which includes state and local receipts, is 21 percent higher than the 1989 total of $3.8 billion.



Industry Employment
Rotary Rigs Active
Total Wells Drilled
Producing Wells

Texas	+ 1.7%	+ 2.1%	-32.7%	+ 2.5%
Alaska	+10.5%	- 1.7%	-36.4%	+12.2%
Louisiana	+ 1.6%	- 1.3%	+ 7.9%	+ 0.4%
California	+ 0.9%	+11.8%	0.0%	- 2.5%
Oklahoma	-14.5%	- 4.9%	- 2.5%	+ 2.9%
Wyoming	- 0.9%	+42.0%	- 8.8%	+ 5.8%
New Mexico	- 3.0%	+40.2%	-38.9%	+ 5.9%
Kansas	- 1.0%	- 0.6%	+ 9.3%	+ 0.5%
TOTAL U.S.	- 1.8%	+ 1.8%	-16.2%	+ 2.3%

An Interview with Calvin Kent

Energy's Number Man

EIA Administrator Calvin Kent says his agency did the base projections and analysis for the administration's national energy strategy now being debated on Capitol Hill. IPAA Vice President of Economics Deborah Rowell is among EIA's sources for petroleum data.

A recent interview with Calvin A. Kent, PhD, administrator, U.S. Energy Information Administration (EIA), at his office in the Department of Energy in Washington. IPAA Economics Vice President Deborah Rowell, whose department compiled this month's magazine, met with Kent in his office in the Forrestal Building.

Petroleum Independent: You were named EIA administrator about one year ago. What has been your experience as a presidential appointee?

Kent: Well, so far it has been incredibly exciting. I was confirmed at 3:17 in the morning immediately following the invasion of Kuwait. The day after I was sworn in, I did three testimonies, two in front of Senate committees and one in front of a House committee.

Petroleum Independent: What did you think of EIA's daily reporting and analysis of the war?

Kent: We were very pleased with how well we were able to respond to the avalanche of requests that came upon us. It was an incredible response effort—inquiries came in at four a minute during the crisis. I think our information is viewed as being accurate and timely and for that reason it was widely used not just in the Energy Department but also by the Defense Department. The CIA used it, the Department of Transportation used it, Commerce used it. We had a very positive impact on getting the right story out to people. I think that was positive in that it ameliorated many of the sharp spikes or collapses that we could have had.

Petroleum Independent: The war with Iraq did cause some price spikes—what role do you think the futures market played?

Kent: We think it played a role, and we think it was a positive role in that it dampened the spikes. The thing most people don't recognize is that most of the players in the futures market are there because they have a legitimate reason to be there. We really feel that the futures market did not in any way contribute to the instability—if anything, it contributed to stability. One of the little ironies of the whole thing was that new trading rules were put in effect because everyone was saying the price was going to go through the ceiling. They had the brakes put on, and of course the price went down—so it was the brakes that kept the price from crashing faster. It was exactly the opposite of what everybody thought.

Petroleum Independent: Not too many people expected that oil prices would drop.

Kent: Well, we did. We actually forecasted that the price was going to come down. We were very confident that as soon as the smoke cleared people would say there is no problem and prices would come down. We called that one right.

Petroleum Independent: What are your goals for EIA; do you plan a shift in emphasis from your predecessor?

Kent: One of the things I was brought in to do was to address emerging issues, which I think are very clear. They (the Bush administration) want more emphasis on conservation, they want more emphasis on renewable technology. They want us to be in the position where we can respond with the data and the modeling in those areas. EIA has always been very excellent on the supply side in terms of traditional fuels. We have not done as well in terms of the demand side.

> ***They (the Bush administration) want more emphasis on conservation, they want more emphasis on renewable technology. They want us to be in the position where we can respond with the data and the modeling in those areas. EIA has always been very excellent on the supply side in terms of traditional fuels. We have not done as well in terms of the demand side.***

The second thing I was brought in to do was to build a national energy model. The process of the national energy strategy convinced us that we needed to look at all of our models—there are over 40 of them—because they don't really work well together. Each of them is probably adequate to outstanding for the job that it does, but they really are not a unified whole.

Petroleum Independent: So this will be an ongoing process?

Kent: Yes. The department has contracted with the National Academy of Sciences, which has a study group that is doing a full report on the modeling. The final report will come out next spring. We're going to find it very useful.

Petroleum Independent: EIA was established as an independent organization. Do you think it is continuing that way?

Kent: I think the independence of EIA is basically in our publications and our data. No one reviews our publications, no one can tell us what to put out. We're quasi-independent. I do work for the president. I'm a political appointee and I serve, as that plaque up there says, at his discretion. Our budget is directly under the control of Congress. Both the legislative branch and the executive branch have gone out of their way to respect our independence.

Petroleum Independent: What is EIA's budget for fiscal 1992?

Kent: We've really been spending more time on the '93 budget, which we had to have submitted on June 1. For 1992 our request was for $76.5 million, up eleven percent.

Petroleum Independent: How involved was your agency with development of the national energy strategy?

Kent: We were very heavily involved at the early stages. We were responsible up until July 1990 for doing all of the studies, projections and the analysis, which constructed the base case. Most of those interagency groups that worked in these areas were chaired by somebody from EIA.

We put together service reports to say where we were in terms of technology, supply and demand. Then it really became the policy office's game after that to decide which alternatives they wanted to consider. We continued working with them on running scenarios and so forth. But we're not a policy shop, we're not advocates.

Petroleum Independent: Are you today supplying this information to the committees in Congress now working on the energy legislation?

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Kent: Oh, yes, that's correct. We work with several of them. In fact, that is where this energy tax business came in. Even though there are no energy taxes in the National Energy Strategy, several people in Congress said they wanted to see what we did on the energy estimates, so we put out a service report on the various areas. We supply information.

But we don't have in our statistics any companies that are not publicly traded, and that certainly doesn't cover all of the companies.

I think only about 60 percent of the independent producers are publicly traded—in terms of production volume not by number of firms. We hope we make that clear, but I'm not sure the message always comes out. What EIA deals with is reports of publicly held companies.

Petroleum Independent: It's a common problem. Getting the data from privately held companies is difficult. IPAA spends a lot of time educating people about who independent producers are and their importance to the nation's energy needs. How do you view the health of the domestic industry?

Kent has extensive experience in energy and utility regulation, including researching and preparing legislation establishing the South Dakota Public Utilities Commission.

Kent: The independent? Well, no one in the production end has done all that well. Of course, the figures again look awfully good for the publicly held companies because a lot of money was made in the first quarter of 1991 in two areas, especially for the big six, with their 215 percent increases in their foreign operation. And then refining looks awfully good because the crude oil price dropped and the product price held firm. One of the things I'm going to try to make clear is there's not an oil industry that should be approached as a monolith. Certainly what's going on in big oil is not what's going on in the oil industry.

> ***Deputy Secretary Moore is very interested in what we call total fuel cycle analysis...What is the real cost of this particular fuel, considering the cost of extraction and distribution—not just the market cost, but the waste cost and everything. This will give us a better basis for comparison to what real prices are.***

Petroleum Independent: Natural gas is so important now, especially to IPAA. Do you have any plans to try to work on getting more natural gas data out or getting it out in a more timely fashion?

Kent: I think one of the problems that everyone recognizes with natural gas is this deliverability question, because there have been so many roadblocks and constraints placed upon the distribution of gas throughout the country. Of course, coming from Texas, we didn't have that problem. It has been taken off the table in so many areas and has not been available. That's a major impediment to future expansion. Certainly one of the reasons for a lot of stress over the national energy strategy is the breaking down of regulatory and other barriers to get gas out.

Petroleum Independent: That is a problem we are all concerned about. What about environmental costs, do you have any plans in that area?

Kent: We have a lot of plans. One of the things that Deputy Secretary Moore is very interested in what we call total fuel cycle analysis. That's just a big name for saying what we want to do is look at the real cost of fuels from the time they are extracted through the processing and disposal. What is the real cost of this particular fuel, considering the cost of extraction and distribution—not just the market cost, but the waste cost and everything. This will give us a better basis for comparison to what real prices are.

Petroleum Independent: Do you think you'll ever be able to do that by state?

Kent: The problem with state data is that it is incredibly expensive to generate in most instances. I think we can regionalize the data, but with the budget we have now we can't do it state by state.

Petroleum Independent: Do you think this total fuel cycle analysis will be divided by environmental categories?

Kent: It's probably too early to say exactly which way it's going, but it certainly will be handled on a fuel basis: coal versus nuclear versus gas versus oil versus solar versus whatever else. That's the way you want it so that people can have a level playing field so far as cost comparisons are concerned. ■

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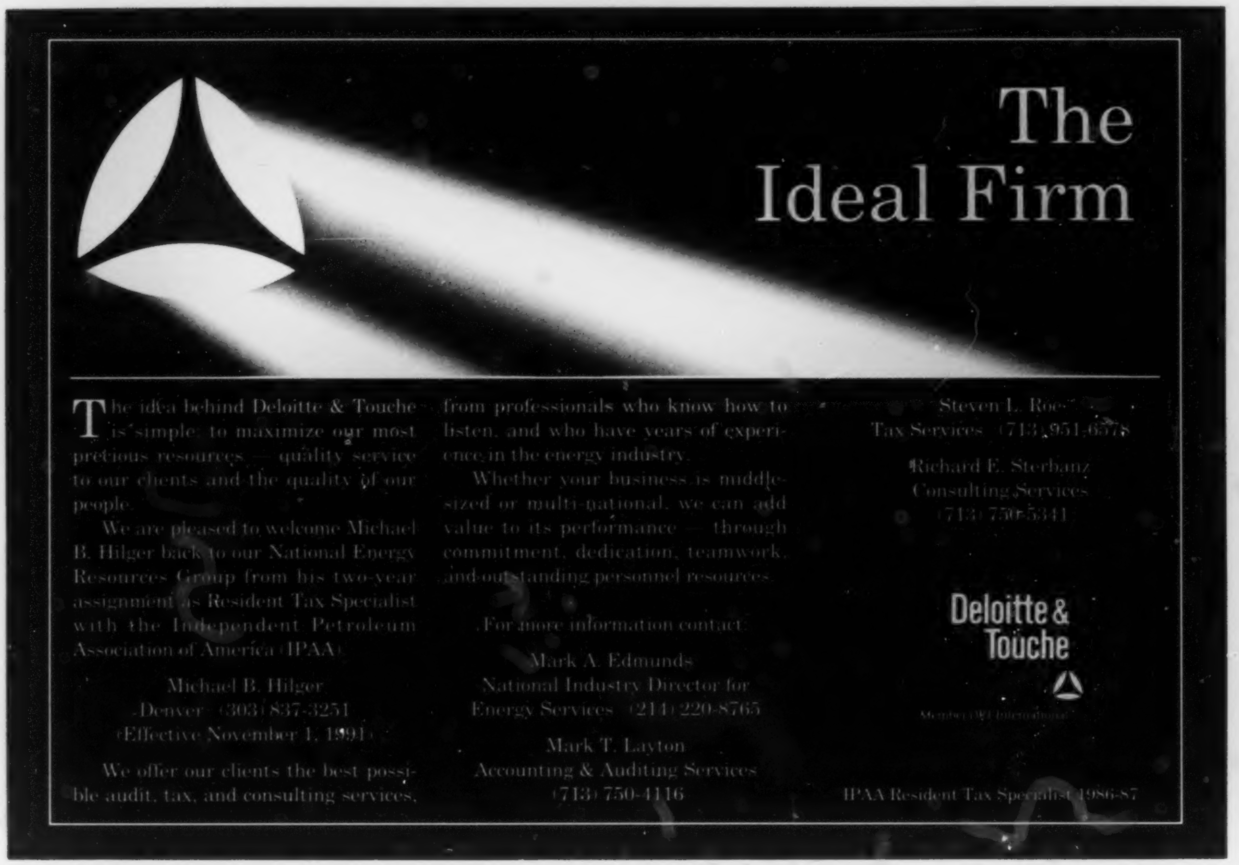
Calvin A. Kent, PhD, administrator of the Energy Information Administration, U.S. Department of Energy, was appointed by President Bush and confirmed by the Senate in the summer of 1990. He is on leave from Baylor University, Waco, Texas, where he held the Herman Lay Chair in Private Enterprise and directed the Center for Private Enterprise and National Center for Education.

He has widespread experience in the area of energy and utility regulation. Before moving to Texas, he was president of the Vermillion, South Dakota City Council which operated its own municipal electric distribution system. He was vice chairman of the South Dakota Public Power Association during the period when it participated in the construction of coal fired electric generators in Wyoming.

Dr. Kent has received world-wide recognition for his leadership in economics and entrepreneurship education. He received his BA from Baylor and his advanced degrees from the University of Missouri-Columbia with post doctorate work at Virginia, Chicago, Wichita State and Rice Universities. He has received numerous awards for outstanding teaching, including being designated as one of the 10 outstanding college teachers in Texas.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Turnaround in the Economy, Normal Weather to Boost Energy Demand

Editors Note: *The following is an EIA Report released on August 14.*

Following this year's lackluster growth in demand for almost all forms of energy, the Energy Information Administration (EIA) announced today that U.S. energy demand will begin to pick up in 1992, based on assumptions of an economic recovery and a return to normal weather next year.

The expected downturn in petroleum demand and the little or no growth expected in natural gas, electricity, and coal demand this year is attributed primarily to the economic recession and milder-than-normal weather. According to EIA's quarterly report, *Short Term Energy Outlook*, as the economy begins to recover in 1992, so will demand for these fuels.

U.S. petroleum demand is expected to increase anywhere from 1.6 percent to 2.8 percent in 1992, assuming crude oil prices remain in the $16- to $22-per-barrel range. In EIA's mid-case scenario of $20 per barrel, natural gas and electricity demand increases in all major sectors, rising by 3.1 percent and 3.6 percent, respectively. Coal consumption is expected to lead to an increase in coal output that would yield a 1992 total close to the record 1.03-billion-short-tons set in 1990.

Crude oil production, which has steadily declined since 1985, is expected to remain at last year's level of 7.4 million barrels per day in 1991. Next year, however, production is expected to resume declining to between 6.9 and 7.3 million barrels per day, depending on the level of crude oil prices and other factors.

The *Short Term Energy Outlook* noted that growth in the economy will be gradual since housing sales and residential construction are still suffering from overcapacity. Consumption will also be slow to rebound as debt levels remain high and as Federal and State governments are under pressure to cut spending.

Oil Summary

	PRODUCTION			TOTAL IMPORTS	OTHER SUPPLY	TOTAL SUPPLY	DOMESTIC DEMAND	EXPORTS	TOTAL DEMAND	CRUDE RESERVES		OIL WELL-HEAD PRICE
	Crude Oil	NGL	Total							Proved Reserves	New Reserves	
	(thous. b/d)									(mill. bbls.)		($/bbl.)
1947	5,087	362	5,449	437	107	5,993	5,938	451	6,389	21,488	2,465	1.93
1948	5,520	401	5,921	514	93	6,528	5,798	368	6,166	23,280	3,795	2.60
1949	5,046	430	5,476	645	46	6,167	5,809	327	6,136	24,649	3,188	2.54
1950	5,407	499	5,906	850	100	6,856	6,556	305	6,861	25,268	2,563	2.51
1951	6,158	561	6,719	844	57	7,620	7,065	422	7,487	27,468	4,414	2.53
1952	6,256	611	6,867	952	28	7,847	7,280	432	7,712	27,961	2,749	2.53
1953	6,458	654	7,112	1,034	30	8,176	7,608	402	8,010	28,945	3,296	2.68
1954	6,342	691	7,033	1,052	32	8,117	7,764	355	8,119	29,561	2,873	2.78
1955	6,807	771	7,578	1,248	44	8,870	8,464	368	8,832	30,012	2,871	2.77
1956	7,151	800	7,951	1,436	52	9,439	8,783	430	9,213	30,435	2,974	2.79
1957	7,170	808	7,978	1,574	61	9,613	8,827	568	9,395	30,300	2,425	3.09
1958	6,710	807	7,517	1,700	65	9,282	9,118	276	9,394	30,536	2,608	3.01
1959	7,054	879	7,933	1,780	86	9,799	9,526	211	9,737	31,719	3,667	2.90
1960	7,035	929	7,964	1,815	147	9,926	9,798	202	10,000	31,613	2,365	2.88
1961	7,183	991	8,174	1,917	179	10,270	9,976	174	10,150	31,759	2,658	2.89
1962	7,332	1,021	8,353	2,082	175	10,610	10,400	168	10,568	31,389	2,181	2.90
1963	7,542	1,098	8,640	2,123	202	10,965	10,743	208	10,951	30,970	2,174	2.89
1964	7,614	1,155	8,769	2,258	217	11,244	11,023	202	11,225	30,991	2,665	2.88
1965	7,804	1,210	9,014	2,468	220	11,702	11,513	187	11,700	31,352	3,048	2.86
1966	8,295	1,284	9,579	2,573	246	12,398	12,085	198	12,283	31,452	2,964	2.88
1967	8,810	1,409	10,219	2,537	293	13,049	12,560	307	12,867	31,377	2,962	2.92
1968	9,096	1,504	10,600	2,840	347	13,787	13,393	231	13,624	30,707	2,455	2.94
1969	9,238	1,590	10,828	3,166	339	14,333	14,137	233	14,370	29,632	2,120	3.09
1970	9,637	1,660	11,297	3,419	355	15,071	14,697	259	14,956	39,001	2,689	3.18
1971	9,463	1,694	11,157	3,925	438	15,520	15,213	224	15,437	38,063	2,318	3.39
1972	9,441	1,744	11,185	4,741	431	16,357	16,367	222	16,589	36,339	1,558	3.39
1973	9,208	1,738	10,946	6,256	472	17,674	17,308	231	17,539	35,300	2,146	3.89
1974	8,774	1,688	10,462	6,112	478	17,052	16,652	221	16,873	34,250	1,994	6.87
1975	8,375	1,632	10,007	6,056	631	16,694	16,322	209	16,531	32,682	1,318	7.67
1976	8,132	1,604	9,736	7,313	577	17,626	17,461	223	17,684	30,942	1,085	8.19
1977	8,245	1,618	9,863	8,787	552	19,202	18,431	243	18,674	31,780	1,140	8.57
1978	8,707	1,567	10,274	8,202	476	18,952	18,847	362	19,209	31,355	2,583	9.00
1979	8,552	1,583	10,135	8,389	570	19,094	18,516	471	18,987	29,810	1,410	12.64
1980	8,597	1,573	10,170	6,865	660	17,695	17,056	544	17,600	29,805	2,970	21.59
1981	8,572	1,609	10,181	5,740	645	16,567	16,058	595	16,653	29,426	2,570	31.77
1982	8,649	1,550	10,199	4,948	643	15,790	15,296	815	16,111	27,858	1,382	28.52
1983	8,688	1,559	10,247	4,817	737	15,801	15,231	739	15,970	27,735	2,897	26.19
1984	8,879	1,630	10,509	5,240	784	16,533	15,726	722	16,448	28,446	3,748	25.88
1985	8,971	1,609	10,580	4,949	758	16,287	15,726	781	16,507	28,416	3,022	24.09
1986	8,680	1,551	10,231	6,176	811	17,218	16,281	785	17,066	26,889	1,446	12.51
1987	8,349	1,595	9,944	6,605	841	17,390	16,665	764	17,429	27,256	3,240	15.40
1988	8,151	1,625	9,776	7,351	902	18,018	17,283	815	18,098	26,825	2,380	12.58
1989	7,626	1,546	9,172	8,005	921	18,098	17,325	859	18,184	26,501	2,262	15.85
1990	7,355	1,559	8,914	7,991	1,021	17,926	16,988	857	17,845	N/A	N/A	20.03

Sources: Energy Information Administration
and American Petroleum Institute

Notes: Imports to Strategic Petroleum Reserve are excluded.
Reserves estimated as of December 31st each year.

Natural Gas Summary

			NATURAL GAS						GAS RESERVES		GAS
	Marketed Production (wet)	Extraction Loss	Dry Production	Gas Imports	Other Supply	Total Supply	Exports	Consumption	Proved Reserves	New Reserves	WELL-HEAD PRICE
					(Bcf)						($/Mcf)
1947	4,582	189	4,393	0	N/A	4,480	18	4,238	165,927	19,981	.06
1948	5,148	210	4,938	0	N/A	5,018	19	4,736	173,869	13,950	.07
1949	5,420	224	5,196	0	N/A	5,302	20	4,971	180,381	12,757	.06
1950	6,282	260	6,022	0	N/A	6,197	26	5,767	185,593	12,104	.07
1951	7,457	292	7,165	0	N/A	7,374	24	6,810	193,812	16,186	.07
1952	8,013	319	7,694	8	222	7,924	27	7,294	199,716	14,544	.08
1953	8,397	340	8,057	9	247	8,313	28	7,639	211,447	20,969	.09
1954	8,743	354	8,389	7	329	8,725	29	8,049	211,711	9,690	.10
1955	9,405	377	9,028	11	438	9,477	31	8,694	223,697	22,105	.10
1956	10,082	418	9,664	10	453	10,127	36	9,289	237,775	24,985	.11
1957	10,680	434	10,246	38	482	10,766	42	9,846	246,569	20,297	.11
1958	11,030	458	10,572	136	621	11,329	39	10,303	254,142	19,058	.12
1959	12,046	498	11,548	134	668	12,350	18	11,321	262,597	20,895	.13
1960	12,771	543	12,228	156	712	13,096	11	11,967	263,759	14,253	.14
1961	13,254	592	12,662	219	697	13,578	11	12,489	267,728	17,421	.15
1962	13,877	624	13,253	402	854	14,509	16	13,267	273,766	19,750	.16
1963	14,747	670	14,077	406	916	15,399	17	13,970	276,151	18,418	.16
1964	15,547	723	14,824	443	886	16,153	20	14,814	281,251	20,447	.15
1965	16,040	753	15,287	456	960	16,703	26	15,280	286,469	21,470	.16
1966	17,207	739	16,468	480	1,141	18,089	25	16,452	289,333	20,355	.16
1967	18,171	785	17,386	564	1,134	19,084	82	17,388	292,908	21,956	.16
1968	19,322	828	18,494	652	1,330	20,476	94	18,632	287,350	13,816	.16
1969	20,698	867	19,831	727	1,380	21,938	51	20,056	275,109	8,482	.17
1970	21,921	906	21,015	821	1,458	23,294	70	21,139	290,746	37,598	.17
1971	22,493	883	21,610	935	1,507	24,052	80	21,793	278,806	10,136	.18
1972	22,532	908	21,624	1,019	1,757	24,400	78	22,101	266,085	9,791	.19
1973	22,648	917	21,731	1,033	1,533	24,297	77	22,049	249,950	6,471	.22
1974	21,601	887	20,714	959	1,700	23,373	77	21,223	237,132	8,501	.30
1975	20,109	872	19,237	953	1,759	21,949	73	19,538	228,200	10,786	.45
1976	19,952	854	19,098	964	2,060	22,122	65	19,946	216,026	7,368	.58
1977	20,025	863	19,162	1,011	1,737	21,910	56	19,521	207,413	12,978	.79
1978	19,974	852	19,122	966	2,150	22,238	53	19,627	208,033	19,425	.91
1979	20,471	808	19,663	1,253	2,058	22,974	56	20,241	200,997	12,221	1.18
1980	20,180	777	19,403	985	2,127	22,515	49	19,877	199,021	16,723	1.59
1981	19,956	775	19,181	904	2,106	22,191	59	19,404	201,730	21,446	1.98
1982	18,520	762	17,758	933	2,309	21,000	52	18,001	201,512	17,288	2.46
1983	16,822	790	16,032	920	2,400	19,352	55	16,835	200,247	14,523	2.59
1984	18,230	838	17,392	843	2,208	20,443	55	17,951	197,463	14,409	2.66
1985	17,198	816	16,382	949	2,168	19,499	55	17,281	193,369	11,891	2.51
1986	16,791	800	15,991	750	1,524	18,265	61	16,221	191,586	13,827	1.94
1987	17,349	812	16,537	992	1,646	19,175	54	17,211	187,211	11,739	1.67
1988	17,841	816	17,026	1,294	1,995	20,315	74	18,030	168,024	-2,517	1.69
1989	18,029	785	17,245	1,382	2,808	21,435	107	18,799	167,116	16,075	1.69
1990	18,469	860	17,609	1,512	2,248	21,369	99	18,834	N/A	N/A	1.72

Sources: Reserves from American Gas Association and Energy Information Administration. All other data from Energy Information Administration.

Notes: Reserves estimated as of December 31st each year. In 1988, there was a significant downward revision in Alaskan natural gas reserves.

Drilling Summary

	SEISMIC CREWS WORKING	ROTARY RIGS ACTIVE	EXPLORATORY COMPLETIONS		TOTAL WELL COMPLETIONS					TOTAL FOOTAGE DRILLED (mill. ft.)
			New-Field Wildcats	Total Exploratory	Oil Wells	Gas Wells	Dry Holes	Service Wells	Total Wells	
1947	N/A	1,783	3,480	6,775	17,999	3,305	9,538	2,280	33,122	114.1
1948	N/A	2,157	4,296	8,013	22,585	2,897	12,026	2,270	39,778	137.4
1949	N/A	2,017	4,449	9,058	22,042	2,887	12,727	1,382	39,038	138.0
1950	N/A	2,154	5,290	10,306	24,430	2,843	14,757	1,249	43,279	159.3
1951	6,537	2,544	6,189	11,756	23,453	3,030	16,653	1,380	44,516	172.3
1952	7,958	2,641	6,698	12,425	23,466	3,255	17,618	1,482	45,821	187.2
1953	7,666	2,613	6,925	13,313	25,762	3,806	18,449	1,262	49,279	198.8
1954	6,863	2,508	7,380	13,100	29,773	3,974	19,168	1,012	53,927	219.0
1955	7,090	2,686	8,105	14,942	31,567	3,608	20,742	760	56,677	226.3
1956	6,813	2,620	8,742	16,207	30,737	4,543	21,797	1,049	58,126	233.9
1957	6,283	2,429	8,014	14,714	28,012	4,620	20,976	230	53,838	223.1
1958	5,064	1,923	6,950	13,199	24,578	4,803	19,043	1,615	50,039	198.2
1959	5,097	2,074	7,031	13,191	25,800	5,029	19,265	1,670	51,764	209.2
1960	4,625	1,750	7,320	11,704	21,186	5,258	17,574	2,733	46,751	190.7
1961	4,557	1,760	6,909	10,992	21,101	5,664	17,106	3,091	46,962	192.1
1962	3,915	1,637	6,794	10,797	21,249	5,848	16,682	2,400	46,179	198.6
1963	3,966	1,500	6,570	10,664	20,288	4,751	16,347	2,267	43,653	184.4
1964	4,102	1,502	6,623	10,747	20,620	4,855	17,488	2,273	45,236	189.9
1965	4,247	1,387	6,175	9,466	18,761	4,724	16,025	1,913	41,423	181.5
1966	3,672	1,273	6,158	10,313	16,447	4,167	15,770	2,152	38,536	165.5
1967	3,337	1,134	5,260	8,878	15,329	3,659	13,246	1,584	33,818	144.7
1968	3,268	1,169	5,205	8,879	14,331	3,456	12,812	2,315	32,914	149.3
1969	3,156	1,194	5,956	9,701	14,368	4,083	13,736	1,866	34,053	161.0
1970	2,340	1,028	4,829	7,436	13,043	4,031	11,099	1,369	29,542	142.0
1971	2,655	976	4,636	7,131	11,903	3,983	10,382	1,414	27,682	130.7
1972	3,016	1,107	5,011	7,551	11,437	5,484	11,013	1,486	29,420	142.5
1973	2,999	1,195	5,096	7,771	10,251	6,975	10,466	970	28,662	141.9
1974	3,662	1,471	5,946	8,969	13,644	7,168	12,205	1,398	34,415	156.7
1975	3,416	1,660	6,234	9,459	16,979	8,169	13,736	1,920	40,804	184.9
1976	3,140	1,656	5,856	9,317	17,697	9,438	13,805	1,674	42,614	190.9
1977	3,063	2,001	6,162	10,140	18,700	12,119	15,036	1,453	47,308	219.6
1978	4,148	2,255	6,731	11,030	19,065	14,405	16,591	1,610	51,671	242.5
1979	4,400	2,176	6,423	10,735	20,689	15,166	16,035	1,472	53,362	247.4
1980	4,962	2,910	7,332	12,870	32,120	17,132	20,234	2,076	71,562	316.4
1981	5,877	3,970	9,151	17,430	42,520	19,742	26,972	2,366	91,600	412.3
1982	5,676	3,105	7,386	15,766	38,388	18,584	25,545	2,212	84,729	377.6
1983	4,944	2,229	6,241	13,943	38,379	12,770	23,854	2,047	77,050	318.7
1984	4,655	2,428	6,619	15,048	43,967	14,943	25,251	2,251	86,412	370.8
1985	3,494	1,969	5,630	12,026	36,145	12,690	21,079	1,736	71,108	315.4
1986	2,016	964	3,527	7,153	18,388	8,008	12,250	834	39,480	179.1
1987	1,561	936	3,559	6,790	16,163	7,794	11,337	890	36,184	163.8
1988	1,512	936	3,271	6,241	13,290	8,254	9,982	953	32,479	155.9
1989	1,392	869	2,630	5,204	10,118	8,890	8,165	651	27,824	132.5
1990	1,500	1,010	2,509	4,768	10,814	9,147	7,691	685	28,337	140.0

Sources: Drilling data from American Petroleum Institute, American Association of Petroleum Geologists, and Baker-Hughes.

Notes: Total well completions include exploratory and development wells.

Reference Information

Data Sources

The editorial staff gratefully acknowledge the following sources of data that appear on the individual state pages:

Number of counties	*The World Almanac*
First and peak production years	*AIME Statistical Yearbook, World Oil, Oil & Gas Journal, & World Petroleum Report*
Deepest wells drilled	*World Oil*
Cumulative wells drilled	*Oil & Gas Journal, World Petroleum StatisticalYearbook,* International Oil Scouts Association, Petroleum Information, & Amercan Petroleum Institute (API)
Cumulative wellhead value	IPAA
Cumulative production and reserves	API, American Gas Association, and Energy Information Administration (EIA)
Wellhead prices and value	EIA
End-use natural gas prices	EIA
Severance and production taxes	IPAA survey
Wells and footage drilled	API
Seismic crews working	Society of Exploration Geophysicists
Rotary drilling rigs	Baker Hughes, Inc.
Producing wells	*World Oil*
Oil and gas production	EIA
Number of employees	IPAA survey
Petroleum reserve position	EIA
Drilling costs	*Joint Association Survey on Drilling Costs*
Stripper wells	Interstate Oil and Gas Compact Commission and National Stripper Well Association
Rank among principal minerals	Based on data from Department of Interior and EIA

Energy Conversions

One barrel of crude oil:
= 42 gallons
= 5,800,000 BTU of energy
= 5,614 cubic feet of natural gas
= 0.22 ton of bituminous coal

One cubic foot of natural gas:
= 7.48 gallons
= 1,032 BTU of energy
= 0.000178 barrel of crude oil
= 0.00004 ton of bituminous coal

One short ton of bituminous coal:
= 2,000 pounds
= 26,200,000 BTU of energy
= 4.52 barrels of crude oil
= 25,314 cubic feet of natural gas

One metric ton of crude oil:
=2,204 pounds
= 7.46 barrels of domestic crude oil
= 6.99 barrels of foreign crude oil

One cubic meter of natural gas:
= 35.314 cubic feet

Abbreviations

bbl. = barrel
b/d = barrels per day
Mcf = thousand cubic feet
MMcf = million cubic feet
Bcf = billion cubic feet
Tcf = trillion cubic feet
BTU = British Thermal Unit
NGL = Natural Gas Liquids
LPG = Liquefied Petroleum Gases
N/A = Data Not Available

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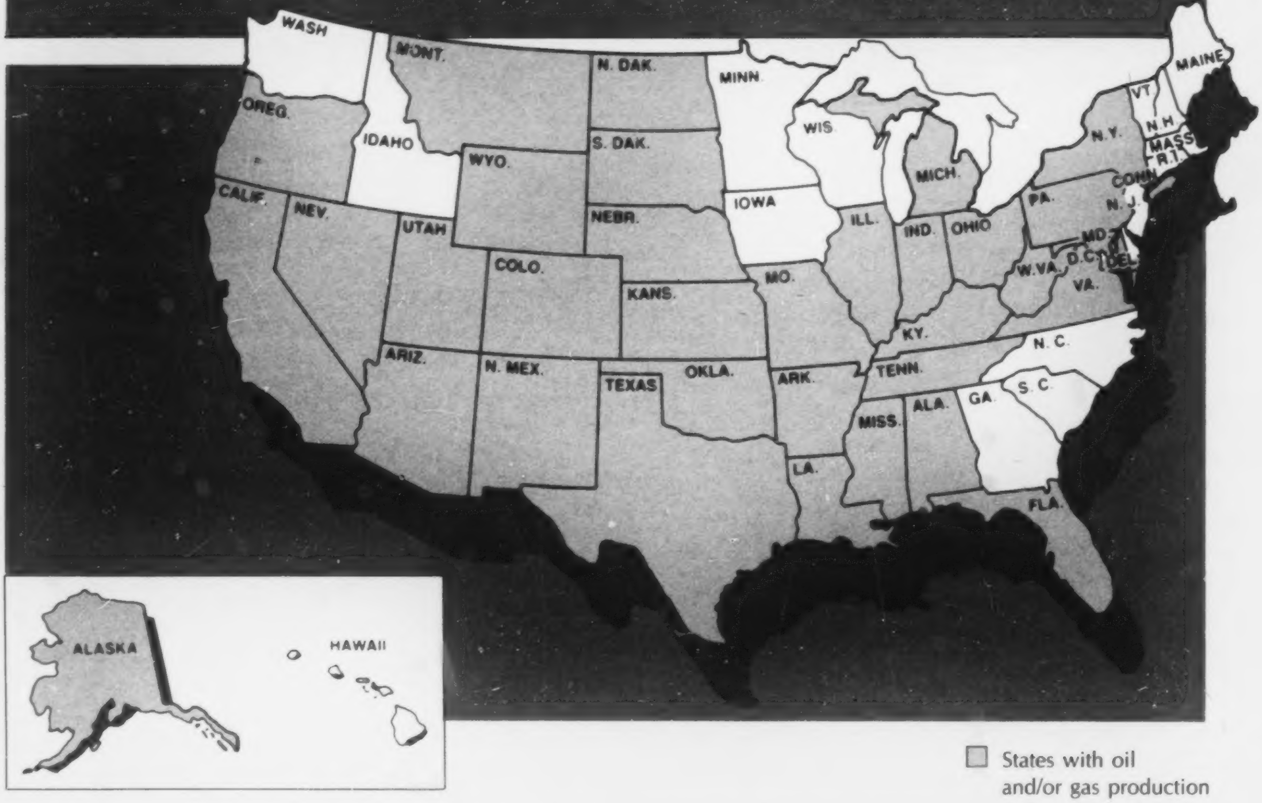
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☐ States with oil and/or gas production

Background Information

Number of states	50
With oil and/or gas production	33

First year of production:

Crude oil	(Pennsylvania)	1859
Natural gas	(Pennsylvania)	1881

Year and amount of peak production:

Crude oil — 3,517,450 thous. bbls.	1970
Natural gas — 22,647,549 MMcf	1973

Deepest producing well: (ft.)

Crude oil	(Texas)	18,060
Natural gas	(Texas)	26,536

Year and depth of deepest well drilled: (ft.)

1974	(Oklahoma)	31,441

Cumulative number of total wells drilled as of 12/31/90: (excluding service wells)

Oil wells	1,774,471	56%
Gas wells	399,090	13%
Dry holes	963,009	31%
Total	3,136,570	100%

Cumulative crude oil wellhead value as of 12/31/90: (thous. $) $1,237,434,522

Cumulative production & new reserves as of 12/31/89: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	177,150	33,640	210,790	917,526
Production	151,016	25,853	176,869	737,417

Value of Oil and Gas

Average 1990 wellhead price:

Crude oil ($/bbl.)	$20.03
Natural gas ($/Mcf)	$1.72

Wellhead value of 1990 production: (thous. $)

Crude oil	$53,774,281
Natural gas	$31,766,111
Total	$85,540,392

Average 1990 natural gas price to: ($/Mcf)

Residential consumers	$5.77
Commercial consumers	$4.83
Industrial consumers	$2.92
Electric utilities	$2.38
All consumers	$4.20

Severance taxes paid in 1990 (thous. $) $4,621,112

Compiled by IPAA-September 1991

1990 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	612	10,202	10,814
Gas	556	8,591	9,147
Dry	3,600	4,091	7,691
Service	- -	685	685
Total	4,768	23,569	28,337

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	4,137.3	46,054.3	50,191.6
Gas	3,760.6	43,234.4	46,995.0
Dry	20,836.1	20,051.9	40,888.0
Service	- -	1,960.7	1,960.7
Total	28,734.0	111,301.3	140,035.3

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled	2,509
New-field wildcat footage (thous. ft.)	15,874.4

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	- -	- -
Production	- -	- -
Reserves	- -	- -

Seismic crew months worked (1989)	1,392
Average rotary rigs active	1,010

Number of producing wells: (12/31/90)

Crude oil	587,762
Flowing	29,485
Artificial lift	558,276
Natural gas	264,558
Total	852,320

Average production:	thous. bbls.	thous. b/d
Crude oil	2,684,687	7,355
NGL	568,999	1,559
Total	3,253,686	8,914

Natural gas marketed production (MMcf)	18,468,669

Average output per producing well:

Crude oil (bbls.)	4,568
Natural gas (Mcf)	69,810

Average number of employees in:

Oil and natural gas extraction	394,123
Refining	128,991
Transportation	179,778
Wholesale	199,067
Retail	646,715
Total petroleum industry	1,548,674

1989 Latest Available Data

Petroleum reserve position as of 12/31/89:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	2,262	262	2,524
Production	2,586	731	3,317
Net annual change	-324	-469	-793
Proved reserves	26,501	7,769	34,270

Natural gas reserve position as of 12/31/89:

(Bcf)	Wet Gas	Dry Gas
New reserves	16,181	16,075
Production	17,752	16,983
Net annual change	-1,571	-908
Proved reserves	175,428	167,116

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	2,784,625	282,273	64.92
Gas	4,042,289	457,790	86.86
Dry	2,842,425	355,392	67.61
Total	9,669,339	362,243	73.55

Number of producing stripper wells	452,589
Number of stripper well abandonments	16,107

Stripper well crude oil production:

(bbls.)	386,915,775
(b/d)	1,060,043
Percentage of oil produced by stripper wells	14%

Stripper oil reserves as of 12/31/89: (thous. bbls.)

Primary	2,029,364
Secondary	1,690,649
Total	3,720,013

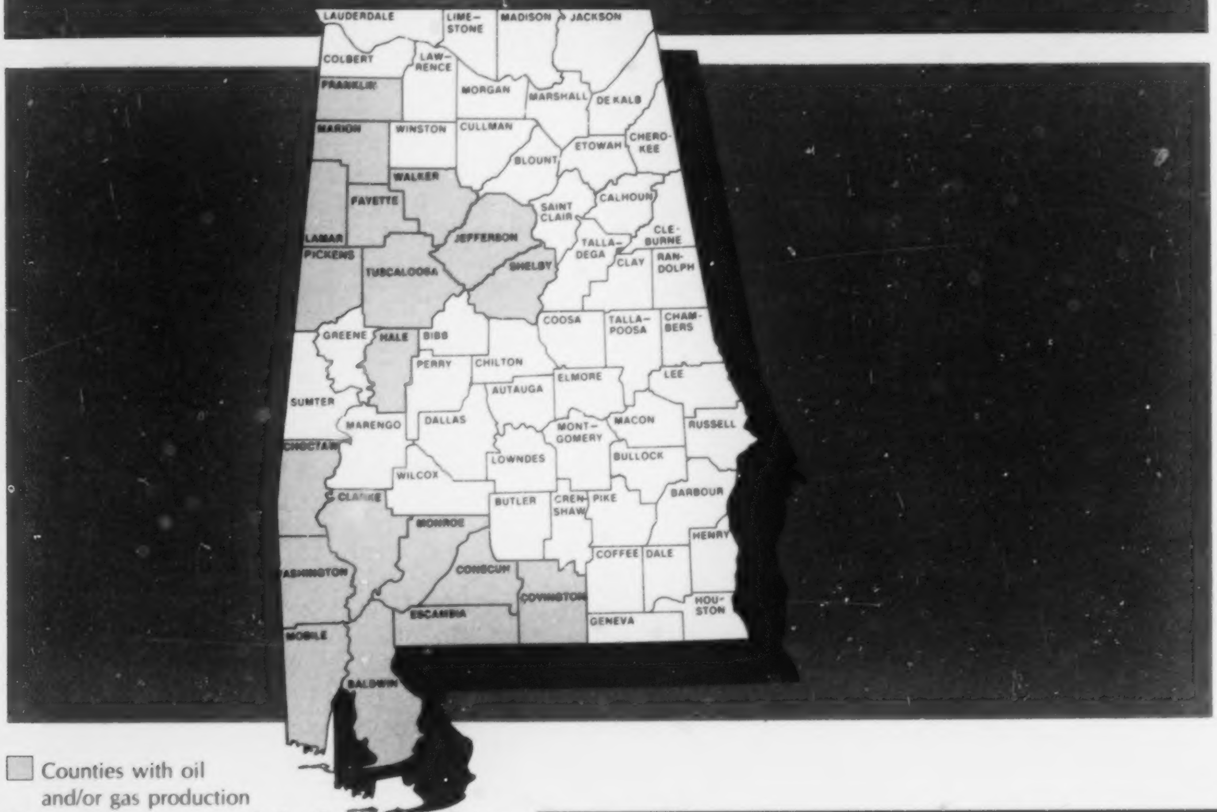
Percentage of total value of principal mineral production:

Crude oil — ranked 1st	34%
Natural gas — ranked 2nd	24%

National Energy Contact

Energy Information Administration
Forrestal Building, Room 1F-048
1000 Independence Avenue, S.W.
Washington, D.C. 20585
(202) 586-5000

ALABAMA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MOBILE
BALDWIN

▨ Counties with oil and/or gas production

Background Information

Number of counties	67
With oil and/or gas production	18

First year of production:

Crude oil	1944
Natural gas	1904

Year and amount of peak production:

Crude oil — 22,153 thous. bbls.	1980
Natural gas — 129,523 MMcf (est.)	1988

Deepest producing well: (ft.)

Crude oil	18,750
Natural gas	21,650

Year and depth of deepest well drilled: (ft.)

1984	21,818

Cumulative number of total wells drilled as of 12/31/90: (excluding service wells)

Oil wells	1,057	16%
Gas wells	2,608	38%
Dry holes	3,135	46%
Total	6,800	100%

Cumulative crude oil wellhead value as of 12/31/90: (thous. $)	$6,880,979

Cumulative production & new reserves as of 12/31/89: (latest available data)

	Crude oil	NGL	Total	Natural gas (Bcf)
		(mill. bbls.)		
Reserves	346	367	713	2,009
Production	303	199	502	1,139

Value of Oil and Gas

Average 1990 wellhead price:

Crude oil ($/bbl.)	$22.10
Natural gas ($/Mcf)	$1.60

Wellhead value of 1990 production: (thous. $)

Crude oil	$409,690
Natural gas	$216,554
Total	$626,244

Average 1990 natural gas price to: ($/Mcf)

Residential consumers	$6.47
Commercial consumers	$5.29
Industrial consumers	$3.05
Electric utilities	$2.22
All consumers	$4.72

Severance taxes paid in 1990 (thous. $)	$45,042

1990 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	9	24	33
Gas	26	848	874
Dry	74	60	134
Service	- -	0	0
Total	109	932	1,041

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	118.0	180.8	298.8
Gas	104.7	2,278.7	2,383.4
Dry	576.6	213.8	790.4
Service	- -	0.0	0.0
Total	799.3	2,673.3	3,472.6

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled	93
New-field wildcat footage (thous. ft.)	696.9

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	21st	2nd
Production	16th	16th
Reserves (1989)	19th	19th

Seismic crew months worked (1989)	4
Average rotary rigs active	26

Number of producing wells: (12/31/90)

Crude oil	872
Flowing	66
Artificial lift	806
Natural gas	2,038
Total	2,910

Average production:	thous. bbls.	thous. b/d
Crude oil	18,538	51
NGL (est.)	12,454	34
Total	30,992	85

Natural gas marketed production (MMcf)	135,340
Average output per producing well:	
Crude oil (bbls.)	21,259
Natural gas (Mcf)	66,408

Average number of employees in:

Oil and natural gas extraction	2,980
Refining	437
Transportation	2,909
Wholesale	5,620
Retail	10,317
Total petroleum industry	22,263

1989 Latest Available Data

Petroleum reserve position as of 12/31/89:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	-2	18	16
Production	9	16	25
Net annual change	-11	2	-9
Proved reserves	43	168	211

Natural gas reserve position as of 12/31/89:

(Bcf)	Wet Gas	Dry Gas
New reserves	108	98
Production	93	88
Net annual change	15	10
Proved reserves	870	819

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	11,623	683,695	70.15
Gas	58,149	148,718	68.85
Dry	31,592	282,076	49.05
Total	101,364	194,931	61.28

Number of producing stripper wells	498
Number of stripper well abandonments	8

Stripper well crude oil production:

(bbls.)	1,461,082
(b/d)	4,003
Percentage of oil produced by stripper wells	7%

Stripper oil reserves as of 12/31/89: (thous. bbls.)

Primary	334
Secondary	263
Total	597

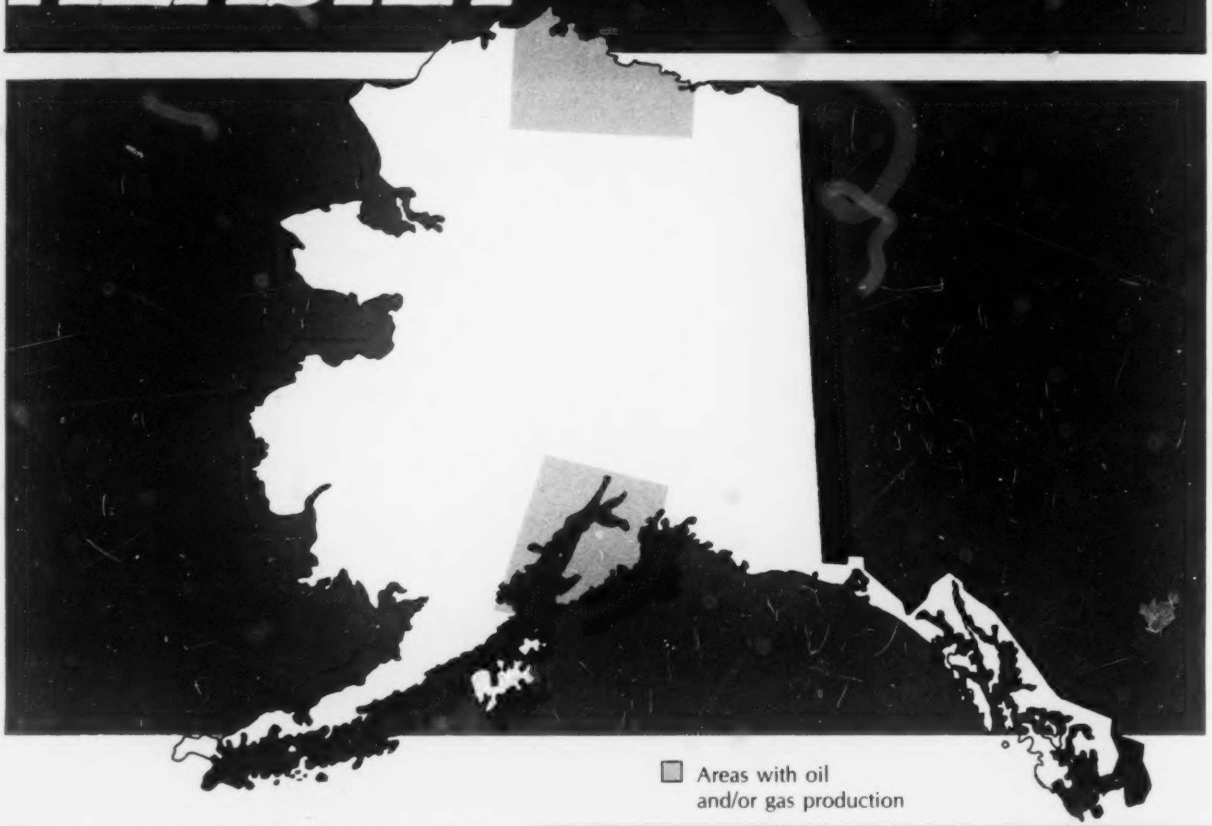
Percentage of total value of principal mineral production:

Crude oil — ranked 3rd	15%
Natural gas — ranked 2nd	16%

State Energy Contact

Alabama State Oil and Gas Board
P.O. Box O
Tuscaloosa, AL 35486
(205) 349-2852

ALASKA


▨ Areas with oil and/or gas production

Background Information

Number of counties	Not Applicable
With oil and/or gas production	Not Applicable

First year of production:

Crude oil	1905
Natural gas	1945

Year and amount of peak production:

Crude oil — 738,143 thous. bbls.	1988
Natural gas — 388,247 MMcf	1989

Deepest producing well: (ft.)

Crude oil	14,952
Natural gas	16,073

Year and depth of deepest well drilled: (ft.)

1979	20,335

Cumulative number of total wells drilled as of 12/31/90: (excluding service wells)

Oil wells	2,108	75%
Gas wells	135	5%
Dry holes	554	20%
Total	2,797	100%

Cumulative crude oil wellhead value as of 12/31/90: (thous. $) $114,556,802

Cumulative production & new reserves as of 12/31/89: (latest available data)

	Crude oil	NGL	Total	Natural gas (Bcf)
	(mill. bbls.)			
Reserves	15,146	449	15,595	14,043
Production	8,475	69	8,544	5,024

Value of Oil and Gas

Average 1990 wellhead price:

Crude oil ($/bbl.)	$15.60
Natural gas ($/Mcf)	$1.35

Wellhead value of 1990 production: (thou[illegible]$)

Crude oil	$10,098,036
Natural gas	$543,810
Total	$10,641,846

Average 1990 natural gas price to: ($/Mcf)

Residential consumers	$3.79
Commercial consumers	$2.63
Industrial consumers	$1.16
Electric utilities	N/A
All consumers	$2.28

Severance taxes paid in 1990 (thous. $) $1,237,821

1990 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	3	93	96
Gas	0	5	5
Dry	2	5	7
Service	- -	8	8
Total	5	111	116

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	37.2	1,024.9	1,062.1
Gas	0.0	37.9	37.9
Dry	22.0	33.5	55.5
Service	- -	86.2	86.2
Total	59.1	1,182.5	1,241.6

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled	2
New-field wildcat footage (thous. ft.)	22.0

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	13th	23rd
Production	2nd	7th
Reserves (1989)	2nd	7th

Seismic crew months worked (1989)	21
Average rotary rigs active	12

Number of producing wells: (12/31/90)

Crude oil	1,466
Flowing	767
Artificial lift	699
Natural gas	109
Total	1,575

Average production:	thous. bbls.	thous. b/d
Crude oil	647,310	1,773
NGL (est.)	13,233	36
Total	660,543	1,809

Natural gas marketed production (MMcf)	402,822
Average output per producing well:	
Crude oil (bbls.)	441,548
Natural gas (Mcf)	3,695,615

Average number of employees in:

Oil and natural gas extraction	10,257
Refining	330
Transportation	1,332
Wholesale	656
Retail	1,104
Total petroleum industry	13,679

1989 Latest Available Data

Petroleum reserve position as of 12/31/89:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	398	-4	394
Production	683	17	700
Net annual change	-285	-21	306
Proved reserves	6,674	380	7,054

Natural gas reserve position as of 12/31/89:

(Bcf)	Wet Gas	Dry Gas
New reserves	243	262
Production	403	401
Net annual change	-160	-139
Proved reserves	9,019	8,939

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	305,432	3,054,317	292.81
Gas	1,943	971,306	157.81
Dry	23,190	4,638,071	506.51
Total	330,565	3,089,390	300.17

Number of producing stripper wells	0
Number of stripper well abandonments	0

Stripper well crude oil production:

(bbls.)	0
(b/d)	0
Percentage of oil produced by stripper wells	0

Stripper oil reserves as of 12/31/89: (thous. bbls.)

Primary	0
Secondary	0
Total	0

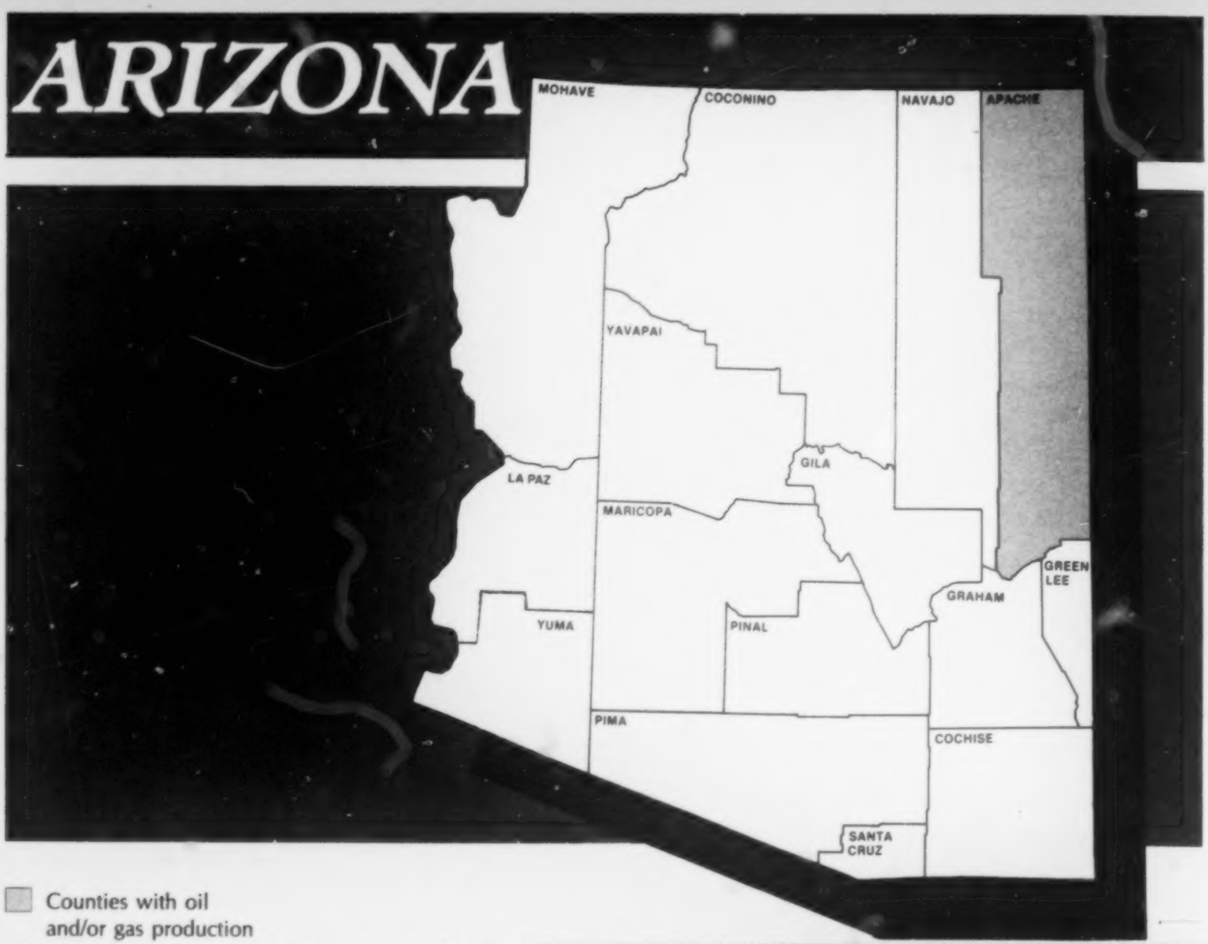
Percentage of total value of principal mineral production:

Crude oil — ranked 1st	92%
Natural gas — ranked 2nd	6%

State Energy Contact

Alaska Oil and Gas Conservation Committee
3001 Porcupine Drive
Anchorage, AK 99501
(907) 279-1433

ARIZONA



▨ Counties with oil
and/or gas production

Background Information

Number of counties	15
With oil and/or gas production	1

First year of production:

Crude oil	1958
Natural gas	1955

Year and amount of peak production:

Crude oil — 3,370 thous. bbls.	1968
Natural gas — 3,161 MMcf	1966

Deepest producing well: (ft.)

Crude oil	6,793
Natural gas	N/A

Year and depth of deepest well drilled: (ft.)

1980	18,013

Cumulative number of total wells drilled as of 12/31/90:
(excluding service wells)

Oil wells	49	10%
Gas wells	37	8%
Dry holes	402	82%
Total	488	100%

Cumulative crude oil wellhead value as of 12/31/90:
(thous. $) $70,779,285

Cumulative production & new reserves as of 12/31/89:
(latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	N/A	0	0	N/A
Production	N/A	0	0	N/A

Value of Oil and Gas

Average 1990 wellhead price:

Crude oil ($/bbl.)	$23.38
Natural gas ($/Mcf)	$1.80

Wellhead value of 1990 production: (thous. $)

Crude oil	$2,852
Natural gas	$2,333
Total	$5,185

Average 1990 natural gas price to: ($/Mcf)

Residential consumers	$6.85
Commercial consumers	$4.77
Industrial consumers	$3.72
Electric utilities	$2.45
All consumers	$4.70

Severance taxes paid in 1990 ....Not Applicable

1990 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	0	0	0
Gas	0	2	2
Dry	0	2	2
Service	- -	0	0
Total	0	4	4

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	0.0	0.0	0.0
Gas	0.0	12.1	12.1
Dry	0.0	0.2	0.2
Service	- -	0.0	0.0
Total	0.0	12.3	12.3

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled	0
New-field wildcat footage (thous. ft.)	0.0

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	- -	29th
Production	30th	28th
Reserves (1989)	N/A	N/A

Seismic crew months worked (1989)	5
Average rotary rigs active	0

Number of producing wells: (12/31/90)

Crude oil	22
Flowing	0
Artificial lift	22
Natural gas	N/A
Total	22

Average production:	thous. bbls.	thous. b/d
Crude oil	122	- -
NGL (est.)	N/A	- -
Total	122	- -

Natural gas marketed production (MMcf)	1,296E

Average output per producing well:

Crude oil (bbls.)	5,545
Natural gas (Mcf)	N/A

Average number of employees in:

Oil and natural gas extraction	106
Refining	N/A
Transportation	1,853
Wholesale	1,314
Retail	9,545
Total petroleum industry	12,818

1989 Latest Available Data

Petroleum reserve position as of 12/31/89:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	N/A	0	0
Production	N/A	0	0
Net annual change	N/A	0	0
Proved reserves	N/A	0	0

Natural gas reserve position as of 12/31/89:

(Bcf)	Wet Gas	Dry Gas
New reserves	N/A	N/A
Production	N/A	N/A
Net annual change	N/A	N/A
Proved reserves	N/A	N/A

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	N/A	- -	- -
Gas	N/A	- -	- -
Dry	N/A	- -	- -
Total	N/A	- -	- -

Number of producing stripper wells	13
Number of stripper well abandonments	0

Stripper well crude oil production:

(bbls.)	25,634
(b/d)	70
Percentage of oil produced by stripper wells	19%

Stripper oil reserves as of 12/31/89: (thous. bbls.)

Primary	98
Secondary	0
Total	98

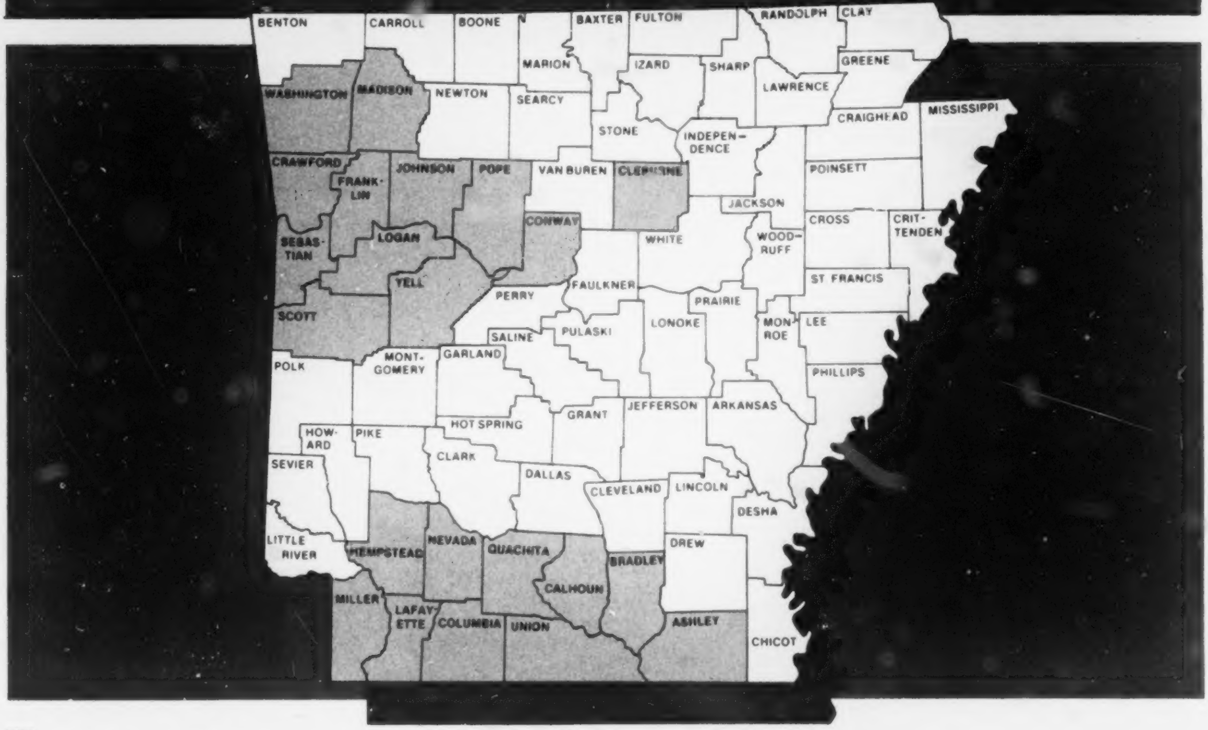
Percentage of total value of principal mineral production:

Crude oil — ranked 8th	Less than 1%
Natural gas --- ranked 10th	Less than 1%

State Energy Contact

Arizona Oil and Gas Conservation Commission
3110 North 19th Avenue
Suite 190
Phoenix, AZ 85015
(602) 255-5161

ARKANSAS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COLUMBIA
UNION
ASHLEY
CHICOT

▨ Counties with oil and/or gas production

Background Information

Number of counties	75
With oil and/or gas production	22

First year of production:

Crude oil	1921
Natural gas	1889

Year and amount of peak production:

Crude oil — 77,398 thous. bbls.	1925
Natural gas — 181,351 MMcf	1970

Deepest producing well: (ft.)

Crude oil	12,128
Natural gas	11,195

Year and depth of deepest well drilled: (ft.)

1979	17,349

Cumulative number of total wells drilled as of 12/31/90: (excluding service wells)

Oil wells	17,947	51%
Gas wells	4,029	11%
Dry holes	13,271	38%
Total	35,247	100%

Cumulative crude oil wellhead value as of 12/31/90: (thous. $) $8,213,682

Cumulative production & new reserves as of 12/31/89: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	1,700	93	1,793	6,830
Production	1,634	84	1,718	4,888

Value of Oil and Gas

Average 1990 wellhead price:

Crude oil ($/bbl.)	$21.55
Natural gas ($/Mcf)	$1.70

Wellhead value of 1990 production: (thous. $)

Crude oil	$223,840
Natural gas	$318,070
Total	$525,810

Average 1990 natural gas price to: ($/Mcf)

Residential consumers	$4.99
Commercial consumers	$4.39
Industrial consumers	$3.01
Electric utilities	$1.57
All consumers	$3.55

Severance taxes paid in 1990 (thous. $) $9,206

1990 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	9	46	55
Gas	3	120	123
Dry	44	97	141
Service	- -	0	0
Total	56	319	375

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	74.2	225.9	300.1
Gas	20.1	598.5	618.6
Dry	268.0	421.1	689.1
Service	- -	0.0	0.0
Total	362.3	1,245.5	1,607.8

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled	43
New-field wildcat footage (thous. ft.)	269.0

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	15th	15th
Production	17th	11th
Reserves (1989)	16th	12th

Seismic crew months worked (1989)	16
Average rotary rigs active	11

Number of producing wells: (12/31/90)

Crude oil	7,265
Flowing	100
Artificial lift	7,165
Natural gas	3,460
Total	10,725

Average production:	thous. bbls.	thous. b/d
Crude oil	10,387	28
NGL (est.)	778	2
Total	11,165	30

Natural gas marketed production (MMcf)	187,100

Average output per producing well:

Crude oil (bbls.)	1,430
Natural gas (Mcf)	54,075

Average number of employees in:

Oil and natural gas extraction	2,588
Refining	475
Transportation	2,497
Wholesale	2,305
Retail	5,893
Total petroleum industry	13,758

1989 Latest Available Data

Petroleum reserve position as of 12/31/89:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	-1	-3	-4
Production	10	1	11
Net annual change	-11	-4	-15
Proved reserves	66	9	75

Natural gas reserve position as of 12/31/89:

(Bcf)	Wet Gas	Dry Gas
New reserves	-51	-48
Production	167	166
Net annual change	-218	-214
Proved reserves	1,782	1,772

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	5,084	154,073	33.78
Gas	40,818	316,416	71.02
Dry	20,032	131,789	28.71
Total	65,934	209,981	46.33

Number of producing stripper wells	7,428
Number of stripper well abandonments	169

Stripper well crude oil production:

(bbls.)	6,575,430
(b/d)	18,015
Percentage of oil produced by stripper wells	58%

Stripper oil reserves as of 12/31/89: (thous. bbls.)

Primary	110,787
Secondary	40,042
Total	150,829

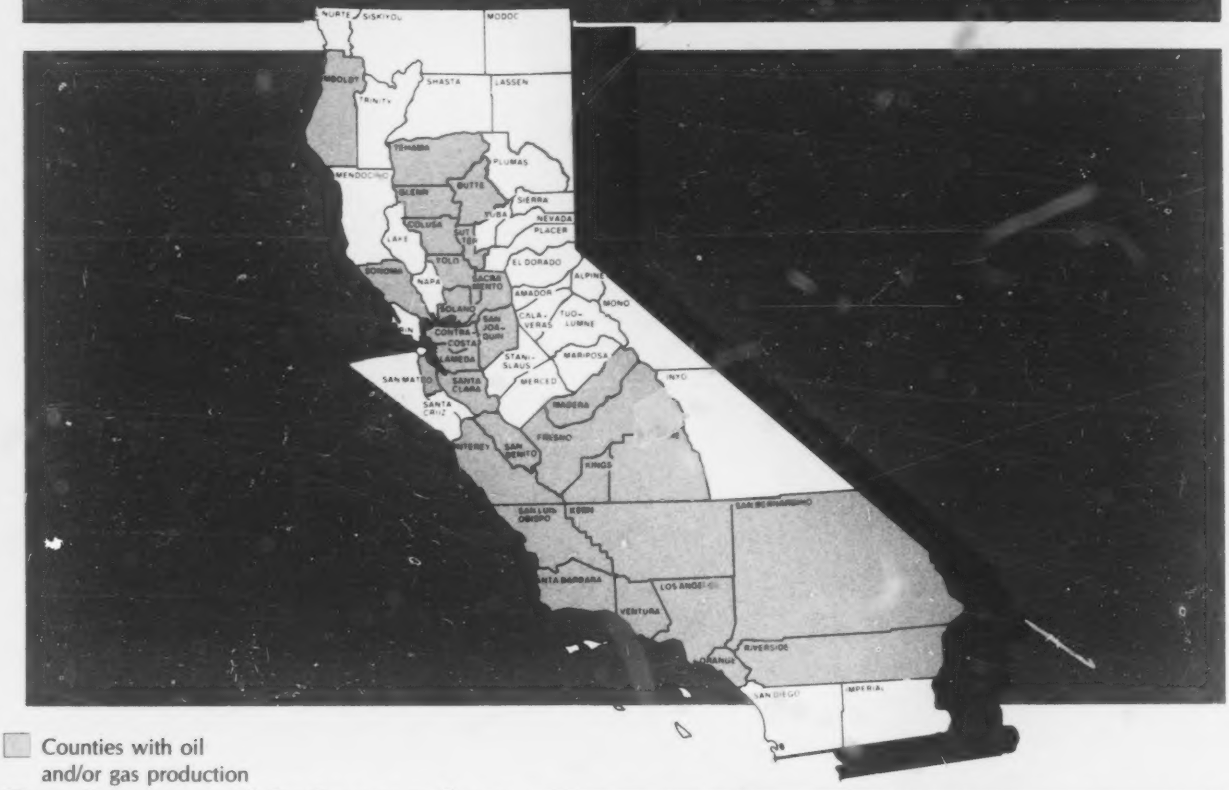
Percentage of total value of principal mineral production:

Crude oil — ranked 3rd	20%
Natural gas — ranked 1st	41%

State Energy Contact

Arkansas Oil and Gas Commission
314 East Oak Street
El Dorado, AR 71730
(501) 862-4965

CALIFORNIA



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▨ Counties with oil
and/or gas production

Background Information

Number of counties	58
With oil and/or gas production	29

First year of production:

Crude oil	1861
Natural gas	1889

Year and amount of peak production:

Crude oil — 423,877 thous. bbls.	1985
Natural gas — 714,893 MMcf	1968

Deepest producing well: (ft.)

Crude oil	18,876
Natural gas	18,008

Year and depth of deepest well drilled: (ft.)

1987	24,426

Cumulative number of total wells drilled as of 12/31/90:
(excluding service wells)

Oil wells	114,280	79%
Gas wells	3,689	2%
Dry holes	27,292	19%
Total	145,261	100%

Cumulative crude oil wellhead value as of 12/31/90:
(thous. $) $130,135,987

Cumulative production & new reserves as of 12/31/89:
(latest available data)

	Crude oil	NGL	Total	Natural gas (Bcf)
		(mill. bbls.)		
Reserves	27,824	1,381	29,205	42,338
Production	22,351	1,243	23,594	32,505

Value of Oil and Gas

Average 1990 wellhead price:

Crude oil ($/bbl.)	$17.80
Natural gas ($/Mcf)	$1.99

Wellhead value of 1990 production: (thous. $)

Crude oil	$6,246,020
Natural gas	$706,892
Total	$6,672,172

Average 1990 natural gas price to: ($/Mcf)

Residential consumers	$5.78
Commercial consumers	$5.13
Industrial consumers	$3.93
Electric utilities	$3.13
All consumers	$4.54

Severance taxes paid in 1990 (thous. $) $366,400
(Property taxes applied to minerals)

1990 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	5	1,608	1,613
Gas	16	72	88
Dry	77	52	129
Service	- -	166	166
Total	98	1,898	1,996

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	35.3	3,193.5	3,228.8
Gas	92.8	464.4	557.2
Dry	504.0	238.8	742.8
Service	- -	295.0	295.0
Total	632.1	4,191.7	4,823.8

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled	34
New-field wildcat footage (thous. ft.)	226.9

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	2nd	16th
Production	4th	8th
Reserves (1989)	3rd	8th

Seismic crew months worked (1989)	73
Average rotary rigs active	49

Number of producing wells: (12/31/90)

Crude oil	43,375
Flowing	993
Artificial lift	42,382
Natural gas	1,169
Total	44,544

Average production:	thous. bbls.	thous. b/d
Crude oil	350,900	961
NGL (est.)	7,005	19
Total	357,905	980

Natural gas marketed production (MMcf)	355,222

Average output per producing well:

Crude oil (bbls.)	8,090
Natural gas (Mcf)	303,868

Average number of employees in:

Oil and natural gas extraction	30,972
Refining	24,456
Transportation	12,819
Wholesale	13,188
Retail	62,217
Total petroleum industry	143,652

1989 Latest Available Data

Petroleum reserve position as of 12/31/89:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	265	3	268
Production	365	9	374
Net annual change	-100	-6	-106
Proved reserves	5,803	138	5,941

Natural gas reserve position as of 12/31/89:

(Bcf)	Wet Gas	Dry Gas
New reserves	153	141
Production	357	342
Net annual change	-204	-201
Proved reserves	5,032	4,870

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	289,211	202,813	97.37
Gas	30,797	459,654	75.51
Dry	94,828	592,674	94.56
Total	414,836	250,959	94.70

Number of producing stripper wells	25,828
Number of stripper well abandonments	1,464

Stripper well crude oil production:

(bbls.)	37,285,923
(b/d)	102,153
Percentage of oil produced by stripper wells	10%

Stripper oil reserves as of 12/31/89: (thous. bbls.)

Primary	144,620
Secondary	60,547
Total	205,167

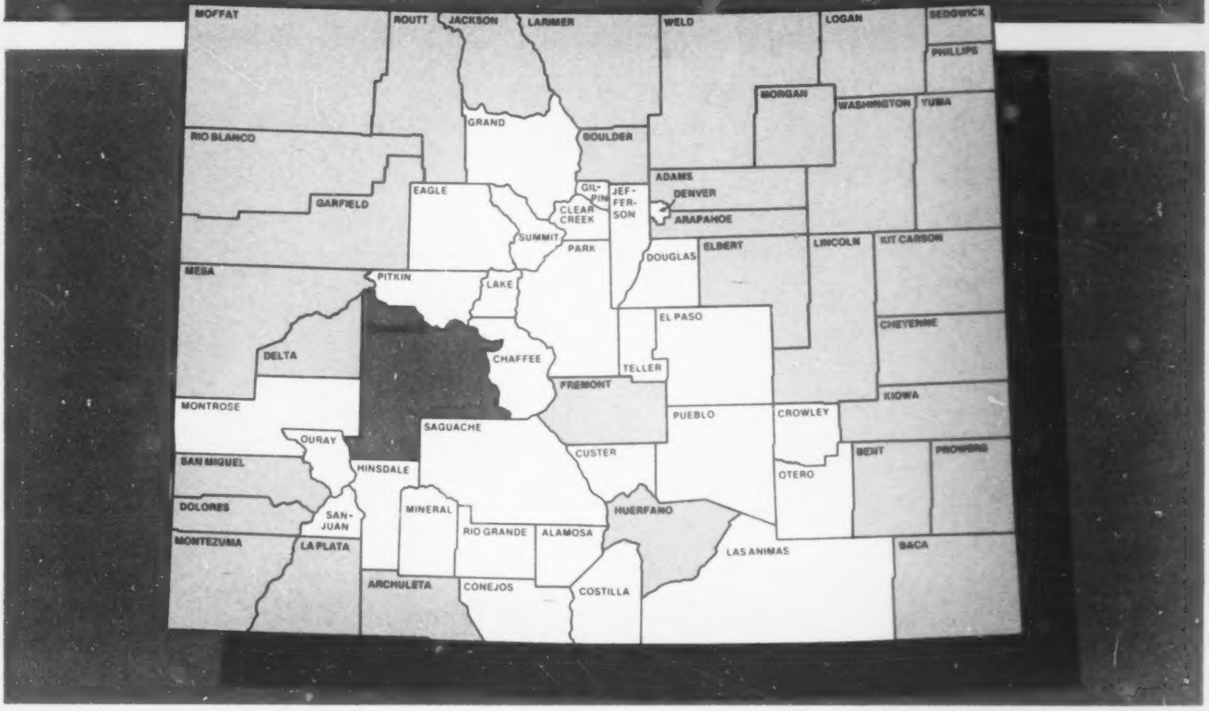
Percentage of total value of principal mineral production:

Crude oil — ranked 1st	58%
Natural gas — ranked 2nd	10%

State Energy Contact

California Department of Conservation
Division of Oil and Gas
1416 Ninth Street, Room 1310
Sacramento, CA 95814
(916) 445-9686

COLORADO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▨ Counties with oil and/or gas production

Background Information

Number of counties	63
With oil and/or gas production	33

First year of production:

Crude oil	1887
Natural gas	1893

Year and amount of peak production:

Crude oil — 58,516 thous. bbls.	1956
Natural gas — 220,165 MMcf	1990

Deepest producing well: (ft.)

Crude oil	12,704
Natural gas	17,632

Year and depth of deepest well drilled: (ft.)

1986	22,096

Cumulative number of total wells drilled as of 12/31/90: (excluding service wells)

Oil wells	11,399	27%
Gas wells	9,031	22%
Dry holes	21,571	51%
Total	42,001	100%

Cumulative crude oil wellhead value as of 12/31/90 (thous. $) $13,264,031

Cumulative production & new reserves as of 12/31/89: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	1,913	419	2,332	9,758
Production	1,554	210	1,764	5,232

Value of Oil and Gas

Average 1990 wellhead price:

Crude oil ($/bbl.)	$23.16
Natural gas ($/Mcf)	$1.55

Wellhead value of 1990 production: (thous. $)

Crude oil	$705,315
Natural gas	$341,256
Total	$1,030,735

Average 1990 natural gas price to: ($/Mcf)

Residential consumers	$4.55
Commercial consumers	$3.95
Industrial consumers	$2.28
Electric utilities	$2.15
All consumers	$3.93

Severance taxes paid in 1990 (thous. $) $8,520

1990 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	24	113	137
Gas	38	636	674
Dry	210	91	301
Service	- -	2	2
Total	272	842	1,114

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	138.9	712.0	850.9
Gas	209.1	3,550.9	3,760.0
Dry	1,129.5	424.6	1,554.1
Service	- -	14.4	14.4
Total	1,477.4	4,701.9	6,179.4

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled	182
New-field wildcat footage (thous. ft.)	998.1

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	11th	7th
Production	10th	9th
Reserves (1989)	8th	9th

Seismic crew months worked (1989)	88
Average rotary rigs active	30

Number of producing wells: (12/31/90)

Crude oil	6,596
Flowing	666
Artificial lift	5,930
Natural gas	5,097
Total	11,693

Average production:	thous. bbls.	thous. b/d
Crude oil	30,454	83
NGL (est.)	8,562	23
Total	39,016	106

Natural gas marketed production (MMcf)	220,165

Average output per producing well:

Crude oil (bbls.)	4,617
Natural gas (Mcf)	43,195

Average number of employees in:

Oil and natural gas extraction	12,599
Refining	517
Transportation	2,300
Wholesale	2,366
Retail	9,514
Total petroleum industry	27,296

1989 Latest Available Data

Petroleum reserve position as of 12/31/89:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	135	39	174
Production	33	11	44
Net annual change	102	28	130
Proved reserves	359	209	568

Natural gas reserve position as of 12/31/89:

(Bcf)	Wet Gas	Dry Gas
New reserves	1,010	959
Production	233	220
Net annual change	777	739
Proved reserves	4,526	4,274

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	20,014	190,609	32.59
Gas	159,160	337,204	62.27
Dry	26,755	85,754	15.57
Total	205,929	231,641	35.65

Number of producing stripper wells	6,537
Number of stripper well abandonments	427

Stripper well crude oil production:

(bbls.)	5,985,831
(b/d)	16,400
Percentage of oil produced by stripper wells	20%

Stripper oil reserves as of 12/31/89: (thous. bbls.)

Primary	57,950
Secondary	2,516
Total	60,466

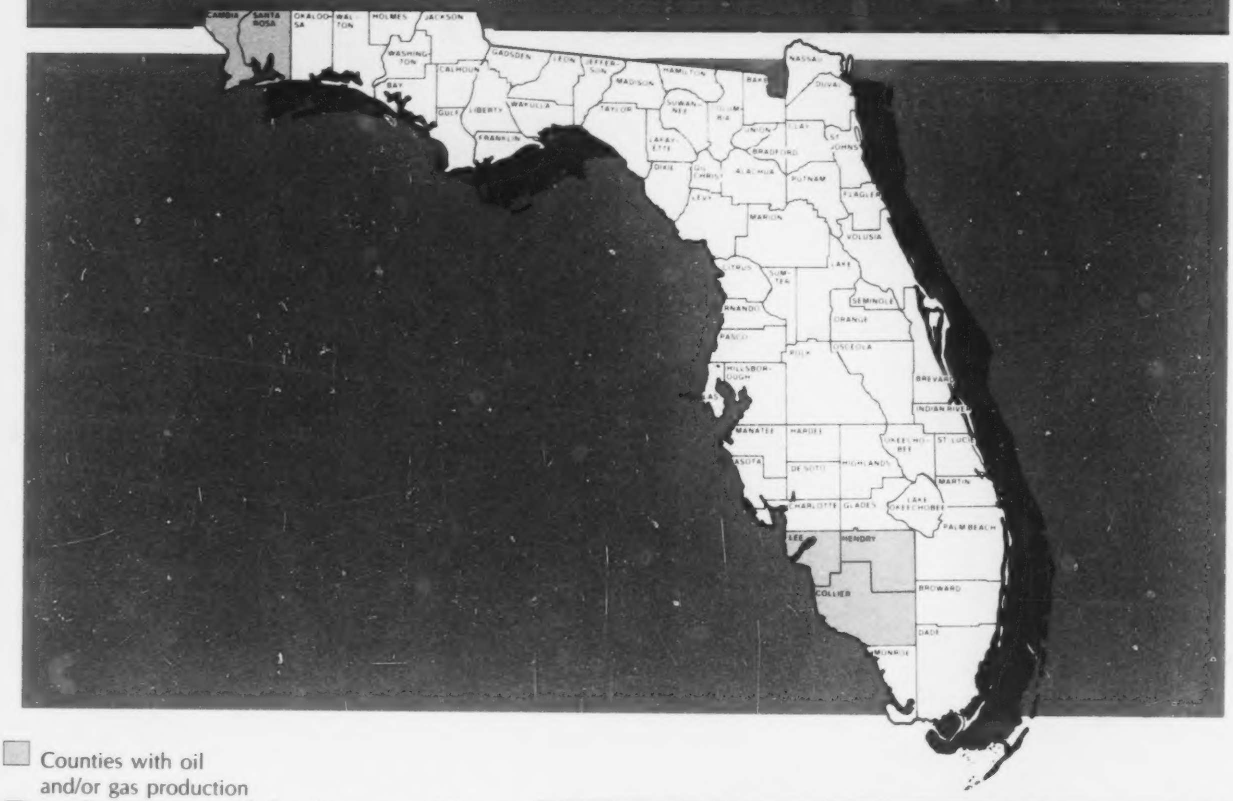
Percentage of total value of principal mineral production:

Crude oil — ranked 1st	33%
Natural gas — ranked 3rd	19%

State Energy Contact

Colorado Oil & Gas Conservation Commission
1580 Logan Street
Suite 380
Denver, CO 80203
(303) 866-3531

FLORIDA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MONROE

▨ Counties with oil
and/or gas production

Background Information

Number of counties	67
With oil and/or gas production	5

First year of production:

Crude oil	1943
Natural gas	1943

Year and amount of peak production:

Crude oil — 47,536 thous. bbls.	1978
Natural gas — 51,595 MMcf	1978

Deepest producing well: (ft.)

Crude oil	16,656
Natural gas	17,452

Year and depth of deepest well drilled: (ft.)

1975	18,670

Cumulative number of total wells drilled as of 12/31/90:
(excluding service wells)

Oil wells	284	28%
Gas wells	3	0%
Dry holes	719	72%
Total	1,006	100%

Cumulative crude oil wellhead value as of 12/31/90:

(thous. $)	$8,431,692

Cumulative production & new reserves as of 12/31/89:
(latest available data)

	Crude oil	NGL	Total	Natural gas (Bcf)
	(mill. bbls.)			
Reserves	648	76	724	565
Production	598	66	664	508

Value of Oil and Gas

Average 1990 wellhead price:

Crude oil ($/bbl.)	$18.25E
Natural gas ($/Mcf)	$2.46

Wellhead value of 1990 production: (thous. $)

Crude oil	$103,551
Natural gas	$16,940
Total	$120,491

Average 1990 natural gas price to: ($/Mcf)

Residential consumers	$8.57
Commercial consumers	$4.99
Industrial consumers	$3.28
Electric utilities	$2.56
All consumers	$3.19

Severance taxes paid in 1990 (thous. $)	$14,710

1990 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	0	0	0
Gas	0	0	0
Dry	9	1	10
Service	- -	0	0
Total	9	1	10

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	0.0	0.0	0.0
Gas	0.0	0.0	0.0
Dry	120.8	15.4	136.2
Service	- -	0.0	0.0
Total	120.8	15.4	136.2

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled	9
New-field wildcat footage (thous. ft.)	120.8

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	29th	N/A
Production	20th	23rd
Reserves (1989)	18th	23rd

Seismic crew months worked (1989)	3
Average rotary rigs active	2

Number of producing wells: (12/31/90)

Crude oil	83
Flowing	41
Artificial lift	42
Natural gas	N/A
Total	83

Average production:	thous. bbls.	thous. b/d
Crude oil	5,674	16
NGL (est.)	778	2
Total	6,452	18

Natural gas marketed production (MMcf)	6,886
Average output per producing well:	
Crude oil (bbls.)	68,361
Natural gas (Mcf)	N/A

Average number of employees in:

Oil and natural gas extraction	514
Refining	302
Transportation	2,394
Wholesale	7,501
Retail	30,348
Total petroleum industry	41,059

1989 Latest Available Data

Petroleum reserve position as of 12/31/89:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	-2	-5	-7
Production	7	1	8
Net annual change	-9	-6	-15
Proved reserves	50	10	60

Natural gas reserve position as of 12/31/89:

(Bcf)	Wet Gas	Dry Gas
New reserves	-3	2
Production	9	7
Net annual change	-12	-5
Proved reserves	57	46

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	3,592	3,592,027	228.28
Gas	- -	- -	- -
Dry	7,003	778,136	53.55
Total	10,595	1,059,525	72.32

Number of producing stripper wells	0
Number of stripper well abandonments	0

Stripper well crude oil production:

(bbls.)	0
(b/d)	0
Percentage of oil produced by stripper wells	0

Stripper oil reserves as of 12/31/89: (thous. bbls.)

Primary	0
Secondary	0
Total	0

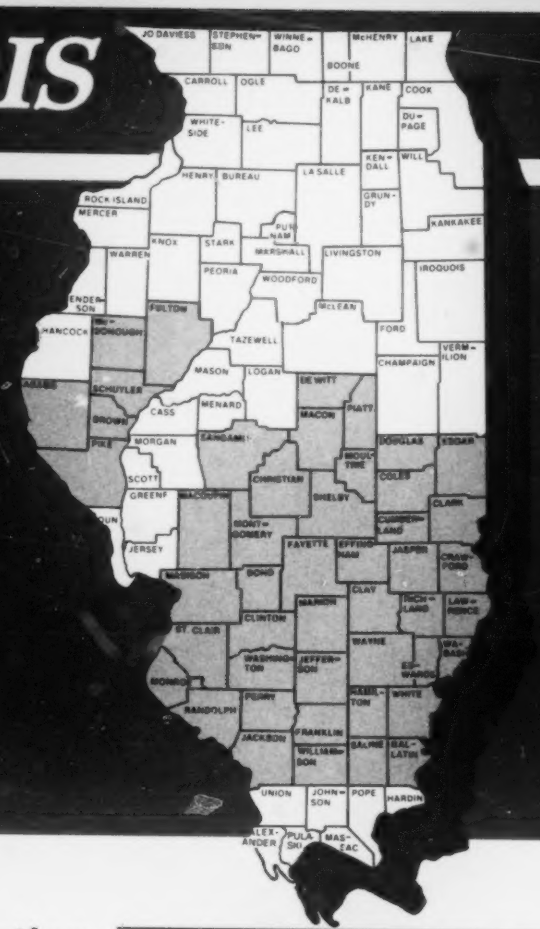
Percentage of total value of principal mineral production:

Crude oil — ranked 4th	5%
Natural gas — ranked 6th	Less than 1 %

State Energy Contact

Florida Bureau of Geology
Division of Resource Management
903 West Tennessee Street
Tallahasee, FL 32304
(904) 488-4191

ILLINOIS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▨ Counties with oil and/or gas production

Background Information

Number of counties 102
With oil and/or gas production 47

First year of production:
Crude oil 1889
Natural gas 1882

Year and amount of peak production:
Crude oil —147,647 thous. bbls. 1940
Natural gas — 18,137 MMcf 1944

Deepest producing well: (ft.)
Crude oil 5,405
Natural gas 4,832

Year and depth of deepest well drilled: (ft.)
1976 14,942

Cumulative number of total wells drilled as of 12/31/90:
(excluding service wells)

Oil wells	80,672	60%
Gas wells	1,727	1%
Dry holes	51,392	39%
Total	133,791	100%

Cumulative crude oil wellhead value as of 12/31/90:
(thous. $) $16,016,919

Cumulative production & new reserves as of 12/31/89:
(latest available data)

	Crude oil	NGL	Total	Natural gas (Bcf)
	(mill. bbls.)			
Reserves	3,433	N/A	3,433	N/A
Production	3,310	N/A	3,310	N/A

Value of Oil and Gas

Average 1990 wellhead price:
Crude oil ($/bbl.) $23.36
Natural gas ($/Mcf) $1.72

Wellhead value of 1990 production: (thous. $)
Crude oil $466,125
Natural gas $2,468
Total $468,593

Average 1990 natural gas price to: ($/Mcf)
Residential consumers $5.02
Commercial consumers $4.71
Industrial consumers $4.09
Electric utilities $2.73
All consumers $4.84

Severance taxes paid in 1990 .... Not Applicable

1990 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	11	393	404
Gas	9	12	21
Dry	158	144	302
Service	- -	42	42
Total	178	591	769

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	30.6	965.0	995.6
Gas	3.6	11.1	14.7
Dry	369.2	317.6	686.8
Service	- -	62.0	62.0
Total	403.4	1,355.7	1,759.1

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled	71
New-field wildcat footage (thous. ft.)	144.8

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	8th	18th
Production	13th	27th
Reserves (1989)	15th	N/A

Seismic crew months worked (1989)	2
Average rotary rigs active	4

Number of producing wells: (12/31/90)

Crude oil	31,874
Flowing	0
Artificial lift	31,874
Natural gas	356
Total	32,230

Average production:	thous. bbls.	thous. b/d
Crude oil	19,954	55
NGL (est.)	N/A	N/A
Total	19,954	55

Natural gas marketed production (MMcf)	1,435E

Average output per producing well:

Crude oil (bbls.)	626
Natural gas (Mcf)	4,031

Average number of employees in:

Oil and natural gas extraction	3,362
Refining	8,983
Transportation	8,988
Wholesale	10,720
Retail	26,854
Total petroleum industry	58,907

1989 Latest Available Data

Petroleum reserve position as of 12/31/89:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	-2	N/A	-2
Production	18	N/A	18
Net annual change	-20	N/A	-20
Proved reserves	123	N/A	123

Natural gas reserve position as of 12/31/89:

(Bcf)	Wet Gas	Dry Gas
New reserves	N/A	N/A
Production	N/A	N/A
Net annual change	N/A	N/A
Proved reserves	N/A	N/A

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	24,237	75,271	33.14
Gas	1,365	30,337	51.77
Dry	13,895	33,242	17.46
Total	39,498	50,316	25.42

Number of producing stripper wells	34,417
Number of stripper well abandonments	295

Stripper well crude oil production:

(bbls.)	18,407,040
(b/d)	50,430
Percentage of oil produced by stripper wells	90%

Stripper oil reserves as of 12/31/89: (thous. bbls.)

Primary	48,020
Secondary	51,100
Total	99,120

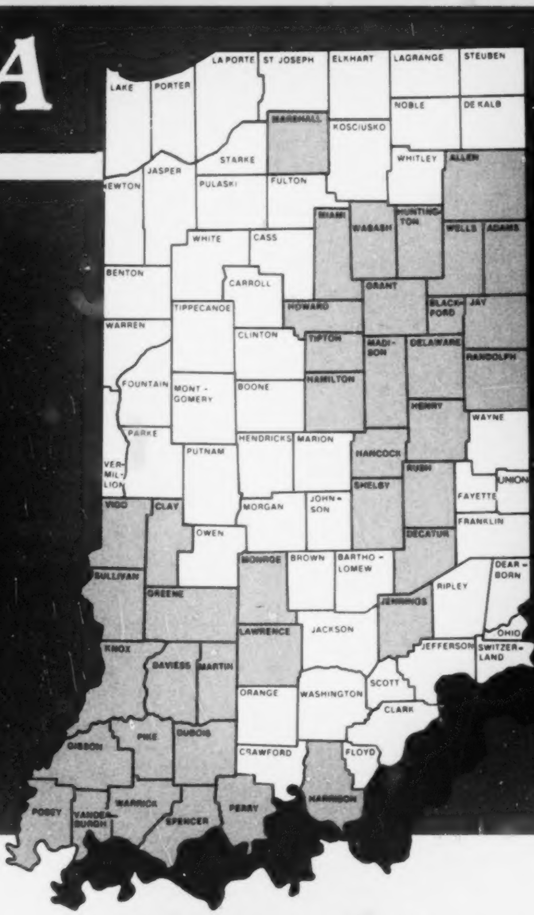
Percentage of total value of principal mineral production:

Crude oil — ranked 2nd	14%
Natural gas — ranked 7th	Less than 1%

State Energy Contact

Illinois Department of Mines and Minerals
704 William G. Stratton Building
Springfield, IL 62706
(217) 782-7756

INDIANA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WARRICK
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PERRY
HARRISON

▨ Counties with oil and/or gas production

Background Information

Number of counties	92
With oil and/or gas production	40

First year of production:

Crude oil	1889
Natural gas	1885

Year and amount of peak production:

Crude oil — 12,823 thous. bbls.	1953
Natural gas — 2,241 MMcf	1936

Deepest producing well: (ft.)

Crude oil	4,508
Natural gas	3,335

Year and depth of deepest well drilled: (ft.)

1971	7,980

Cumulative number of total wells drilled as of 12/31/90: (excluding service wells)

Oil wells	38,632	58%
Gas wells	2,239	4%
Dry holes	25,339	38%
Total	66,210	100%

Cumulative crude oil wellhead value as of 12/31/90: (thous. $) $2,678,494

Cumulative production & new reserves as of 12/31/89: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	528	N/A	528	N/A
Production	512	N/A	512	N/A

Value of Oil and Gas

Average 1990 wellhead price:

Crude oil ($/bbl.)	$23.46
Natural gas ($/Mcf)	$2.01

Wellhead value of 1990 production: (thous. $)

Crude oil	$70,380
Natural gas	[illegible]04
Total	$71,[illegible]84

Average 1990 natural gas price to: ($/Mcf)

Residential consumers	$5.54
Commercial consumers	$4.78
Industrial consumers	$3.75
Electric utilities	$2.58
All consumers	$4.94

Severance taxes paid in 1990 (thous. $)	$810

1990 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	5	39	44
Gas	5	8	13
Dry	37	43	80
Service	- -	10	10
Total	47	100	147

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	5.5	69.4	74.9
Gas	15.5	5.9	21.4
Dry	56.6	55.2	111.8
Service	- -	13.2	13.2
Total	77.6	143.7	221.3

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled	19
New-field wildcat footage (thous. ft.)	35.4

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	18th	21st
Production	23rd	30th
Reserves (1989)	24th	N/A

Seismic crew months worked (1989)	0
Average rotary rigs active	0

Number of producing wells: (12/31/90)

Crude oil	7,506
Flowing	0
Artificial lift	7,506
Natural gas	1,311
Total	8,817

Average production:	thous. bbls.	thous. b/d
Crude oil	3,000	8
NGL (est.)	N/A	N/A
Total	3,000	8

Natural gas marketed production (MMcf)	400E

Average output per producing well:

Crude oil (bbls.)	400
Natural gas (Mcf)	305

Average number of employees in:

Oil and natural gas extraction	512
Refining	2,597
Transportation	3,070
Wholesale	3,481
Retail	20,013
Total petroleum industry	29,673

1989 Latest Available Data

Petroleum reserve position as of 12/31/89:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	-3	N/A	-3
Production	3	N/A	3
Net annual change	-6	N/A	-6
Proved reserves	16	N/A	16

Natural gas reserve position as of 12/31/89:

(Bcf)	Wet Gas	Dry Gas
New reserves	N/A	N/A
Production	N/A	N/A
Net annual change	N/A	N/A
Proved reserves	N/A	N/A

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	1,731	27,917	22.12
Gas	191	19,096	17.38
Dry	2,037	19,777	13.61
Total	3,959	22,622	16.57

Number of producing stripper wells	6,281
Number of stripper well abandonments	245

Stripper well crude oil production:

(bbls.)	3,309,394
(b/d)	9,067
Percentage of oil produced by stripper wells	100%

Stripper oil reserves as of 12/31/89: (thous. bbls.)

Primary	20,162
Secondary	17,138
Total	37,300

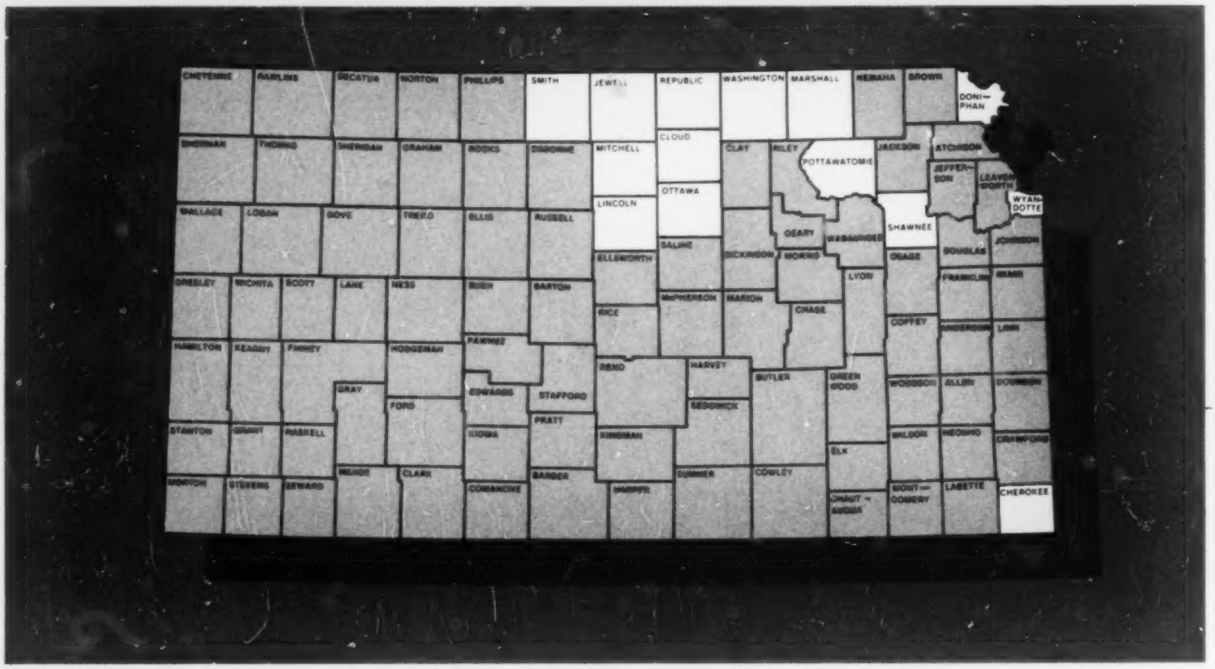
Percentage of total value of principal mineral production:

Crude oil — ranked 5th	5%
Natural gas — ranked 9th	Less than 1%

State Energy Contact

Indiana Department of Natural Resources
Division of Oil and Gas
911 State Office Building, Room 911B
Indianapolis, IN 46204
(317) 232-4055

KANSAS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MONTGOMERY
LABETTE
CHEROKEE

▨ Counties with oil
and/or gas production

Background Information

Number of counties	105
With oil and/or gas production	91

First year of production:

Crude oil	1889
Natural gas	1882

Year and amount of peak production:

Crude oil — 124,204 thous. bbls.	1956
Natural gas — 899,955 MMcf	1970

Deepest producing well: (ft.)

Crude oil	7,400
Natural gas	6,774

Year and depth of deepest well drilled: (ft.)

1984	11,300

Cumulative number of total wells drilled as of 12/31/90:
(excluding service wells)

Oil wells	123,656	51%
Gas wells	24,592	10%
Dry holes	96,142	39%
Total	244,390	100%

Cumulative crude oil wellhead value as of 12/31/90: (thous. $)	$33,141,862

Cumulative production & new reserves as of 12/31/89:
(latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	5,836	1,140	6,976	41,571
Production	5,498	811	6,309	31,062

Value of Oil and Gas

Average 1990 wellhead price:

Crude oil ($/bbl.)	$23.21
Natural gas ($/Mcf)	$1.54

Wellhead value of 1990 production: (thous. $)

Crude oil,	$1,286,461
Natural gas	$859,716
Total	$2,146,177

Average 1990 natural gas price to: ($/Mcf)

Residential consumers	$4.49
Commercial consumers	$3.41
Industrial consumers	$2.77
Electric utilities	$1.74
All consumers	$3.52

Severance taxes paid in 1990 (thous. $)	$206,502

1990 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	169	748	917
Gas	56	496	552
Dry	631	440	1,071
Service	- -	0	0
Total	856	1,684	2,540

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	722.4	1,964.1	2,686.5
Gas	264.5	1,465.4	1,729.9
Dry	2,552.4	1,469.0	4,021.4
Service	- -	0.0	0.0
Total	3,539.3	4,898.5	8,437.8

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled	422
New-field wildcat footage (thous. ft.)	1,757.3

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	4th	8th
Production	8th	6th
Reserves (1989)	9th	6th

Seismic crew months worked (1989)	312
Average rotary rigs active	47

Number of producing wells: (12/31/90)

Crude oil	45,470
Flowing	59
Artificial lift	45,411
Natural gas	14,043
Total	59,513

Average production:	thous. bbls.	thous. b/d
Crude oil	55,427	152
NGL (est.)	14,011	38
Total	69,438	190

Natural gas marketed production (MMcf)	558,257

Average output per producing well:

Crude oil (bbls.)	1,219
Natural gas (Mcf)	39,753

Average number of employees in:

Oil and natural gas extraction	8,447
Refining	2,300
Transportation	4,723
Wholesale	2,606
Retail	9,155
Total petroleum industry	27,231

1989 Latest Available Data

Petroleum reserve position as of 12/31/89:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	65	2	67
Production	54	18	72
Net annual change	11	-16	-5
Proved reserves	338	329	667

Natural gas reserve position as of 12/31/89:

(Bcf)	Wet Gas	Dry Gas
New reserves	550	536
Production	571	549
Net annual change	-21	-13
Proved reserves	10,509	10,091

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	60,776	71,250	25.80
Gas	84,674	140,888	44.71
Dry	56,629	54,767	14.49
Total	202,079	81,221	24.77

Number of producing stripper wells	45,559
Number of stripper well abandonments	1,470

Stripper well crude oil production:

(bbls.)	46,189,113
(b/d)	126,546
Percentage of oil produced by stripper wells	83%

Stripper oil reserves as of 12/31/89 (thous. bbls.)

Primary	137,840
Secondary	118,840
Total	256,680

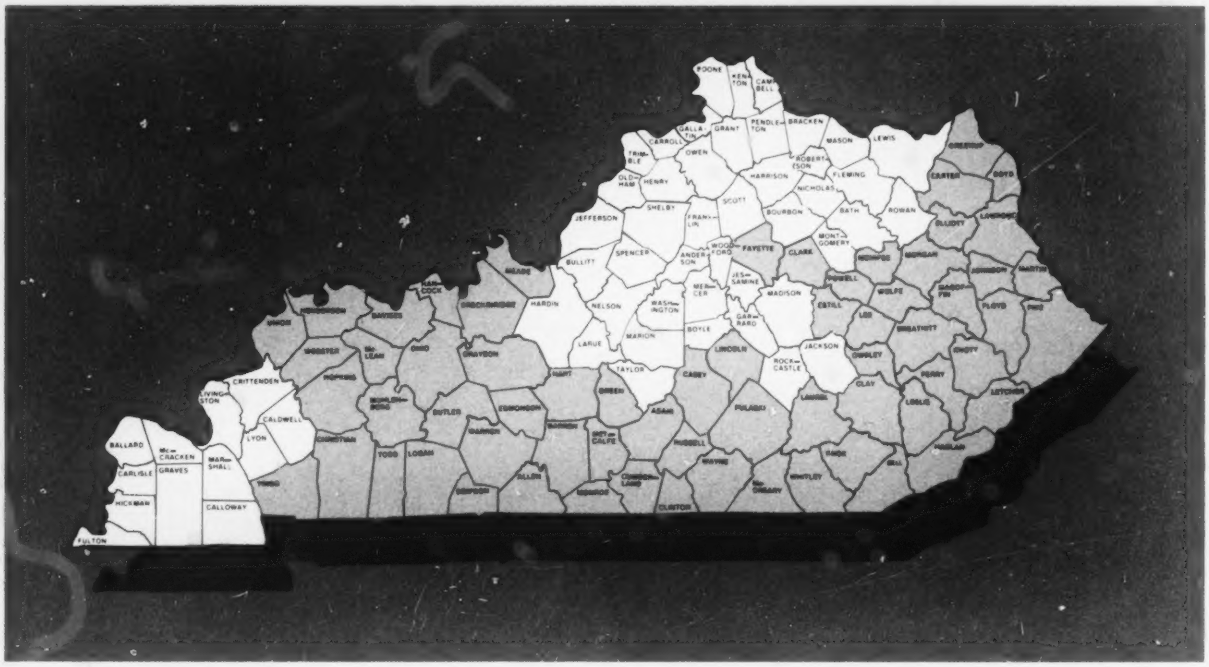
Percentage of total value of principal mineral production:

Crude oil — ranked 1st	46%
Natural gas — ranked 2nd	39%

State Energy Contact

Kansas Corporation Commission
202 West 1st Street
Colorado Derby Building, Suite 200
Wichita, KS 67202
(316) 263-3238

KENTUCKY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CUMBERLAND
McCREARY
WHITLEY
HICKMAN
CALLOWAY
CLINTON
FULTON

▨ Counties with oil and/or gas production

Background Information

Number of counties	120
With oil and/or gas production	63

First year of production:

Crude oil	1860
Natural gas	1888

Year and amount of peak production:

Crude oil — 27,272 thous. bbls.	1959
Natural gas — 96,459 MMcf	1947

Deepest producing well: (ft.)

Crude oil	7,598
Natural gas	10,934

Year and depth of deepest well drilled: (ft.)

1977	15,200

Cumulative number of total wells drilled as of 12/31/90: (excluding service wells)

Oil wells	53,680	50%
Gas wells	12,799	12%
Dry holes	40,760	38%
Total	107,239	100%

Cumulative crude oil wellhead value as of 12/31/90: (thous. $) $16,350,754

Cumulative production & new reserves as of 12/31/89: (latest available data)

	Crude oil	NGL	Total	Natural gas (Bcf)
		(mill. bbls.)		
Reserves	735	138	873	4,879
Production	702	122	824	3,931

Value of Oil and Gas

Average 1990 wellhead price:

Crude oil ($/bbl.)	$23.20
Natural gas ($/Mcf)	$1.94

Wellhead value of 1990 production: (thous. $)

Crude oil	$125,535
Natural gas	$137,321
Total	$262,856

Average 1990 natural gas price to: ($/Mcf)

Residential consumers	$4.91
Commercial consumers	$4.49
Industrial consumers	$3.84
Electric utilities	$3.04
All consumers	$4.65

Severance taxes paid in 1990 (thous. $) $13,754

1990 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	7	111	118
Gas	3	287	290
Dry	55	104	159
Service	- -	2	2
Total	65	504	569

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	21.0	174.4	195.4
Gas	8.8	935.8	944.6
Dry	111.8	181.1	292.9
Service	- -	3.2	3.2
Total	141.6	1,294.5	1,436.1

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled	27
New-field wildcat footage (thous. ft.)	65.6

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	12th	12th
Production	21st	18th
Reserves (1989)	20th	17th

Seismic crew months worked (1989)	1
Average rotary rigs active	8

Number of producing wells: (12/31/90)

Crude oil	22,741
Flowing	0
Artificial lift	22,741
Natural gas	11,713
Total	34,454

Average production:	thous. bbls	thous. b/d
Crude oil	5,411	15
NGL (est.)	778	2
Total	6,189	17

Natural gas marketed production (MMcf)	70,784E

Average output per producing well:

Crude oil (bbls.)	238
Natural gas (Mcf)	6,043

Average number of employees in:

Oil and natural gas extraction	1,828
Refining	3,493
Transportation	3,033
Wholesale	3,206
Retail	12,553
Total petroleum industry	24,113

1989 Latest Available Data

Petroleum reserve position as of 12/31/89:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	3	-7	-4
Production	4	1	5
Net annual change	-1	-8	-9
Proved reserves	33	16	49

Natural gas reserve position as of 12/31/89:

(Bcf)	Wet Gas	Dry Gas
New reserves	125	134
Production	67	65
Net annual change	58	69
Proved reserves	1,015	992

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	8,064	40,321	26.74
Gas	49,815	126,435	44.95
Dry	7,365	24,148	16.53
Total	65,245	72,575	35.16

Number of producing stripper wells	19,358
Number of stripper well abandonments	443

Stripper well crude oil production:

(bbls.)	4,396,109
(b/d)	12,044
Percentage of oil produced by stripper wells	80%

Stripper oil reserves as of 12/31/89: (thous. bbls.)

Primary	10,692
Secondary	14,344
Total	25,036

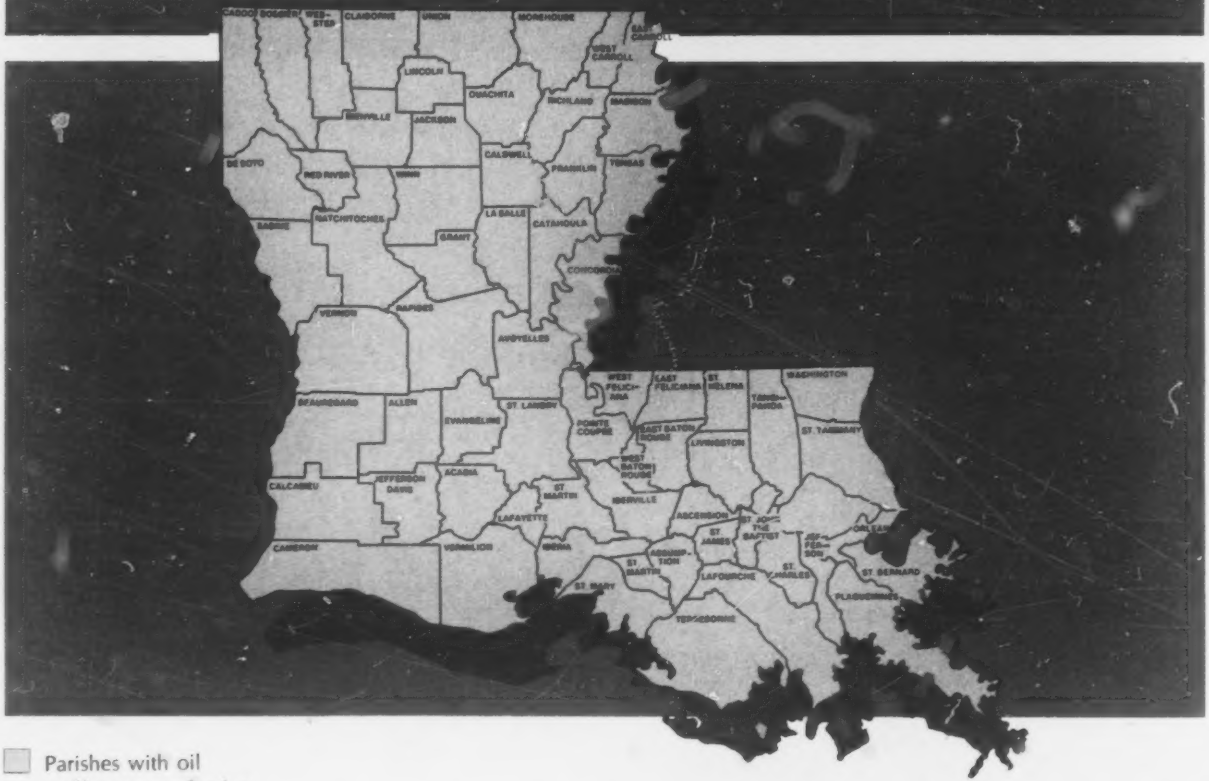
Percentage of total value of principal mineral production:

Crude oil — ranked 5th	2%
Natural gas — ranked 3rd	3%

State Energy Contact

Kentucky Department of Mines and Minerals
Oil and Gas Division
P.O. Box 690
Lexington, KY 40586
(606) 257-3812

LOUISIANA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ST MARTIN
LAFOURCHE
ST CHARLES
ST BERNARD
ST MARY
PLAQUEMINES
TERREBONNE

▨ Parishes with oil
and/or gas production

Background Information

Number of parishes	64
With oil and/or gas production	64
First year of production:	
Crude oil	1902
Natural gas	1905
Year and amount of peak production:	
Crude oil — 935,243 thous. bbls.	1971
Natural gas — 8,242,423 MMcf	1973
Deepest producing well: (ft.)	
Crude oil	22,856
Natural gas	21,862
Year and depth of deepest well drilled: (ft.)	
1981	25,703

Cumulative number of total wells drilled as of 12/31/90:
(excluding service wells)

Oil wells	85,577	45%
Gas wells	32,818	17%
Dry holes	71,610	38%
Total	190,005	100%

Cumulative crude oil wellhead value as of 12/31/90:
(thous. $) $197,698,631

Cumulative production & new reserves as of 12/31/89:
(latest available data)

	Crude oil	NGL	Total	Natural gas (Bcf)
	(mill. bbls.)			
Reserves	26,697	4,169	30,866	245,307
Production	24,261	3,072	27,333	207,785

Value of Oil and Gas

Average 1990 wellhead price:	
Crude oil ($/bbl.)	$23.03
Natural gas ($/Mcf)	$1.83
Wellhead value of 1990 production: (thous. $)	
Crude oil	$8,991,050
Natural gas	$9,585,286
Total	$18,576,336

Average 1990 natural gas price to: ($/Mcf)	
Residential consumers	$6.10
Commercial consumers	$5.35
Industrial consumers	$2.77
Electric utilities	$1.73
All consumers	$2.24

Severance taxes paid in 1990 (thous. $) $414,887

1990 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	8	437	445
Gas	8	420	428
Dry	227	522	749
Service	- -	0	0
Total	243	1,379	1,622

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	85.4	2,228.8	2,314.2
Gas	78.3	3,375.1	3,453.4
Dry	1,806.8	3,942.1	5,748.9
Service	- -	0.0	0.0
Total	1,970.5	9,546.0	11,516.5

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled	225
New-field wildcat footage (thous. ft.)	1,809.3

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	6th	9th
Production	3rd	2nd
Reserves (1989)	4th	2nd

Seismic crew months worked (1989)	68
Average rotary rigs active	151

Number of producing wells: (12/31/90)

Crude oil	23,812
Flowing	2,001
Artificial lift	21,811
Natural gas	13,530
Total	37,342

Average production:	thous. bbls.	thous. b/d
Crude oil	390,406	1,070
NGL (est.)	114,423	313
Total	504,829	1,383

Natural gas marketed production (MMcf)	5,237,861
Average output per producing well:	
Crude oil (bbls.)	16,395
Natural gas (Mcf)	387,129

Average number of employees in:

Oil and natural gas extraction	53,700
Refining	11,155
Transportation	6,806
Wholesale	5,611
Retail	8,271
Total petroleum industry	85,543

1989 Latest Available Data

Petroleum reserve position as of 12/31/89:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	446	215	661
Production	337	147	484
Net annual change	109	68	177
Proved reserves	2,436	1,097	3,533

Natural gas reserve position as of 12/31/89:

(Bcf)	Wet Gas	Dry Gas
New reserves	6,146	6,012
Production	5,132	5,013
Net annual change	1,014	1,008
Proved reserves	37,522	36,703

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	430,996	1,161,713	159.38
Gas	801,368	1,535,189	186.33
Dry	757,364	993,916	117.12
Total	1,989,728	1,202,253	147.70

Number of producing stripper wells	14,788
Number of stripper well abandonments	428

Stripper well crude oil production:

(bbls.)	7,429,510
(b/d)	20,355
Percentage of oil produced by stripper wells	2%

Stripper oil reserves as of 12/31/89: (thous. bbls.)

Primary	55,798
Secondary	54,912
Total	110,710

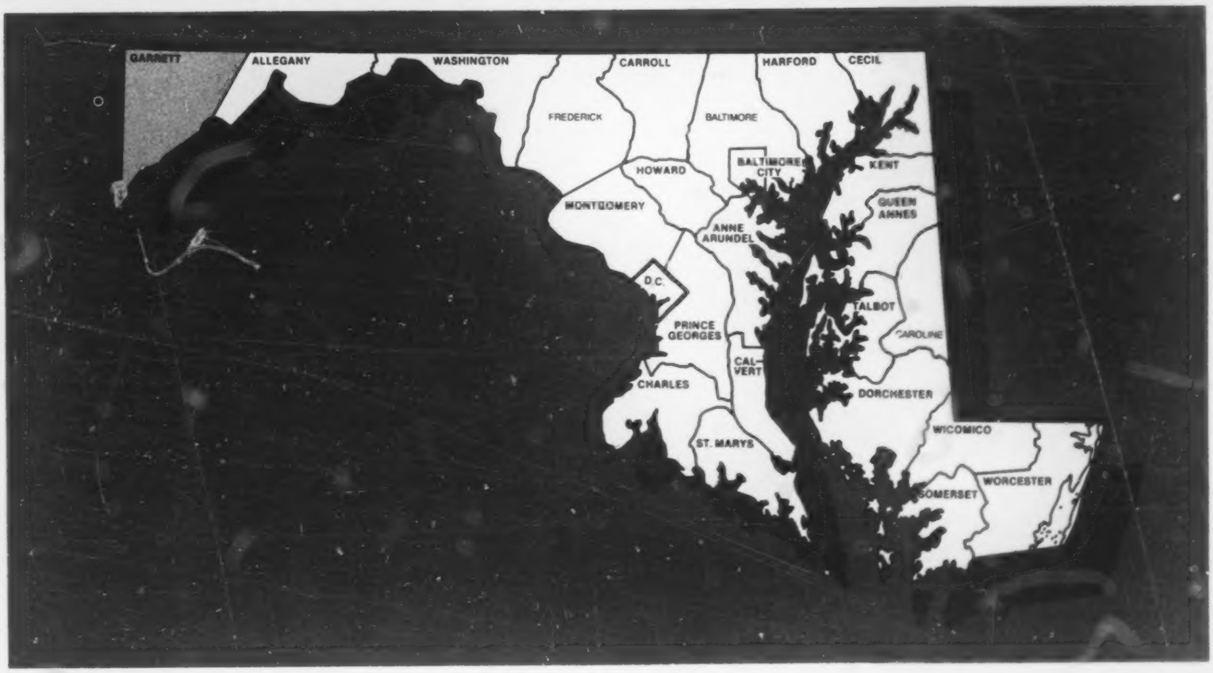
Percentage of total value of principal mineral production:

Crude oil — ranked 2nd	44%
Natural gas — ranked 1st	54%

State Energy Contact

Louisiana Department of Natural Resources
P.O. Box 44396
Capitol Station
Baton Rouge, LA 70804
(504) 342-4500

MARYLAND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CHARLES
DORCHESTER
WICOMICO
ST. MARYS
WORCESTER
SOMERSET

▨ Counties with oil and/or gas production

Background Information

Number of counties	23
With oil and/or gas production	1

First year of production:

Crude oil	Not Applicable
Natural gas	1950

Year and amount of peak production:

Crude oil	Not Applicable
Natural gas — 4,543 MMcf	1959

Deepest producing well: (ft.)

Crude oil	Not Applicable
Natural gas	8,658

Year and depth of deepest well drilled: (ft.)

1973	11,617

Cumulative number of total wells drilled as of 12/31/90: (excluding service wells)

Oil wells	0	0%
Gas wells	72	59%
Dry holes	51	41%
Total	123	100%

Cumulative crude oil wellhead value as of 12/31/90: (thous. $) .... Not Applicable

Cumulative production & new reserves as of 12/31/89: (latest available data)

	Crude oil	NGL	Total	Natural gas (Bcf)
	(mill. bbls.)			
Reserves	0	N/A	N/A	N/A
Production	0	N/A	N/A	N/A

Value of Oil and Gas

Average 1990 wellhead price:

Crude oil ($/bbl.)	Not Applicable
Natural gas ($/Mcf)	$1.20

Wellhead value of 1990 production: (thous. $)

Crude oil	Not Applicable
Natural gas	$44
Total	$44

Average 1990 natural gas price to: ($/Mcf)

Residential consumers	$6.41
Commercial consumers	$5.42
Industrial consumers	$4.58
Electric utilities	$2.55
All consumers	$5.39

Severance taxes paid in 1990 (thous. $) $1

1990 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	0	0	0
Gas	0	0	0
Dry	0	0	0
Service	- -	0	0
Total	0	0	0

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	0.0	0.0	0.0
Gas	0.0	0.0	0.0
Dry	0.0	0.0	0.0
Service	- -	0.0	0.0
Total	0.0	0.0	0.0

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled	0
New-field wildcat footage (thous. ft.)	0

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	- -	N/A
Production	- -	31st
Reserves (1989)	- -	N/A

Seismic crew months worked (1989)	0
Average rotary rigs active	0

Number of producing wells: (12/31/89)	
Crude oil	0
Flowing	0
Artificial lift	0
Natural gas	N/A
Total	0

Average production:	thous. bbls.	thous. b/d
Crude oil	0	- -
NGL (est.)	0	- -
Total	0	- -

Natural gas marketed production (MMcf)	37E
Average output per producing well:	
Crude oil (bbls.)	0
Natural gas (Mcf)	N/A

Average number of employees in:	
Oil and natural gas extraction	28
Refining	253
Transportation	1,128
Wholesale	2,925
Retail	12,917
Total petroleum industry	17,251

1989 Latest Available Data

Petroleum reserve position as of 12/31/89:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	0	N/A	N/A
Production	0	N/A	N/A
Net annual change	0	N/A	N/A
Proved reserves	0	N/A	N/A

Natural gas reserve position as of 12/31/89:

(Bcf)	Wet Gas	Dry Gas
New reserves	N/A	N/A
Production	N/A	N/A
Net annual change	N/A	N/A
Proved reserves	N/A	N/A

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	N/A	- -	- -
Gas	N/A	- -	- -
Dry	N/A	- -	- -
Total	N/A	- -	- -

Number of producing stripper wells	0
Number of stripper well abandonments	0

Stripper well crude oil production:	
(bbls.)	0
(b/d)	0
Percentage of oil produced by stripper wells	0

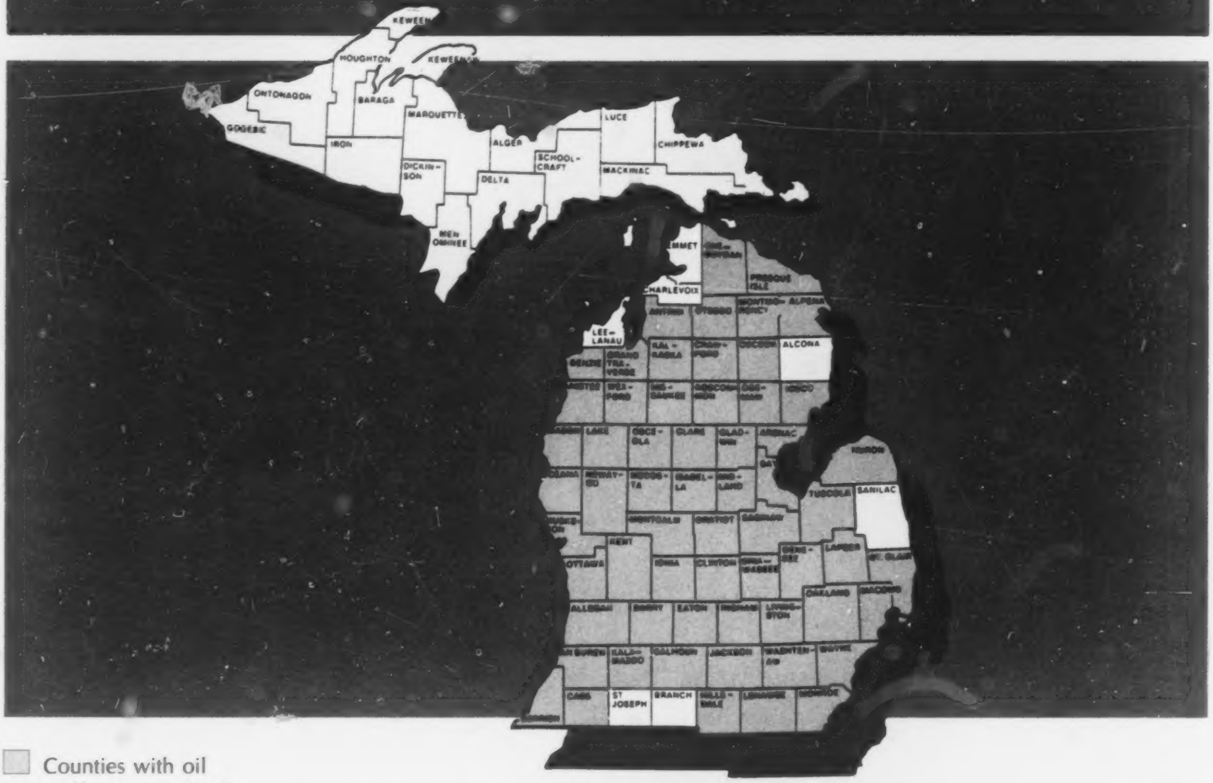
Stripper oil reserves as of 12/31/89: (thous. bbls.)	
Primary	0
Secondary	0
Total	0

Percentage of total value of principal mineral production:	
Crude oil	Not Applicable
Natural gas — ranked 7th	Less than 1%

State Energy Contact

Maryland Geological Survey
2300 Saint Paul Street
Baltimore, MD 21218
(301) 554-5500

MICHIGAN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MONROE

▨ Counties with oil and/or gas production

Background Information

Number of counties	83
With oil and/or gas production	61

First year of production:

Crude oil	1900
Natural gas	1909

Year and amount of peak production:

Crude oil — 34,862 thous. bbls.	1979
Natural gas — 159,731 MMcf	1979

Deepest producing well: (ft.)

Crude oil	10,515
Natural gas	11,635

Year and depth of deepest well drilled: (ft.)

1975	17,466

Cumulative number of total wells drilled as of 12/31/90: (excluding service wells)

Oil wells	14,362	37%
Gas wells	4,625	12%
Dry holes	19,985	51%
Total	38,972	100%

Cumulative crude oil wellhead value as of 12/31/90: (thous. $) $11,309,882

Cumulative production & new reserves as of 12/31/89: (latest available data)

	Crude oil	NGL	Total	Natural gas (Bcf)
	(mill. bbls.)			
Reserves	1,197	250	1,447	3,042
Production	1,069	153	1,222	1,599

Value of Oil and Gas

Average 1990 wellhead price:

Crude oil ($/bbl.)	$22.90
Natural gas ($/Mcf)	$2.99

Wellhead value of 1990 production: (thous. $)

Crude oil	$450,558
Natural gas	$497,416
Total	$947,974

Average 1990 natural gas price to: ($/Mcf)

Residential consumers	$5.00
Commercial consumers	$4.68
Industrial consumers	$4.19
Electric utilities	$0.47
All consumers	$4.66

Severance taxes paid in 1990 (thous. $) $53,202

1990 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	6	22	28
Gas	13	779	792
Dry	115	43	158
Service	- -	3	3
Total	134	847	981

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	29.4	102.2	131.6
Gas	98.9	1,404.5	1,503.4
Dry	617.0	208.6	825.6
Service	- -	11.3	11.3
Total	745.4	1,726.6	2,471.9

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled	120
New-field wildcat footage (thous. ft.)	647.7

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	22nd	4th
Production	15th	13th
Reserves (1989)	14th	14th

Seismic crew months worked (1989)	85
Average rotary rigs active	13

Number of producing wells: (12/31/90)

Crude oil	4,570
Flowing	605
Artificial lift	3,965
Natural gas	1,438
Total	6,008

Average production:	thous. bbls.	thous. b/d
Crude oil	19,675	54
NGL (est.)	7,784	21
Total	27,459	75

Natural gas marketed production (MMcf)	166,360

Average output per producing well:

Crude oil (bbls.)	4,305
Natural gas (Mcf)	115,688

Average number of employees in:

Oil and natural gas extraction	3,880
Refining	1,498
Transportation	6,972
Wholesale	5,949
Retail	26,475
Total petroleum industry	44,774

1989 Latest Available Data

Petroleum reserve position as of 12/31/89:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	14	8	22
Production	18	10	28
Net annual change	-4	-2	-6
Proved reserves	128	97	225

Natural gas reserve position as of 12/31/89:

(Bcf)	Wet Gas	Dry Gas
New reserves	148	148
Production	139	129
Net annual change	9	19
Proved reserves	1,443	1,342

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	13,235	264,695	34.79
Gas	127,243	207,236	98.31
Dry	70,303	420,974	77.12
Total	210,780	253,647	86.27

Number of producing stripper wells	3,110
Number of stripper well abandonments	138

Stripper well crude oil production:

(bbls.)	3,135,611
(b/d)	8,591
Percentage of oil produced by stripper wells	15%

Stripper oil reserves as of 12/31/89: (thous. bbls.)

Primary	22,355
Secondary	24,707
Total	47,062

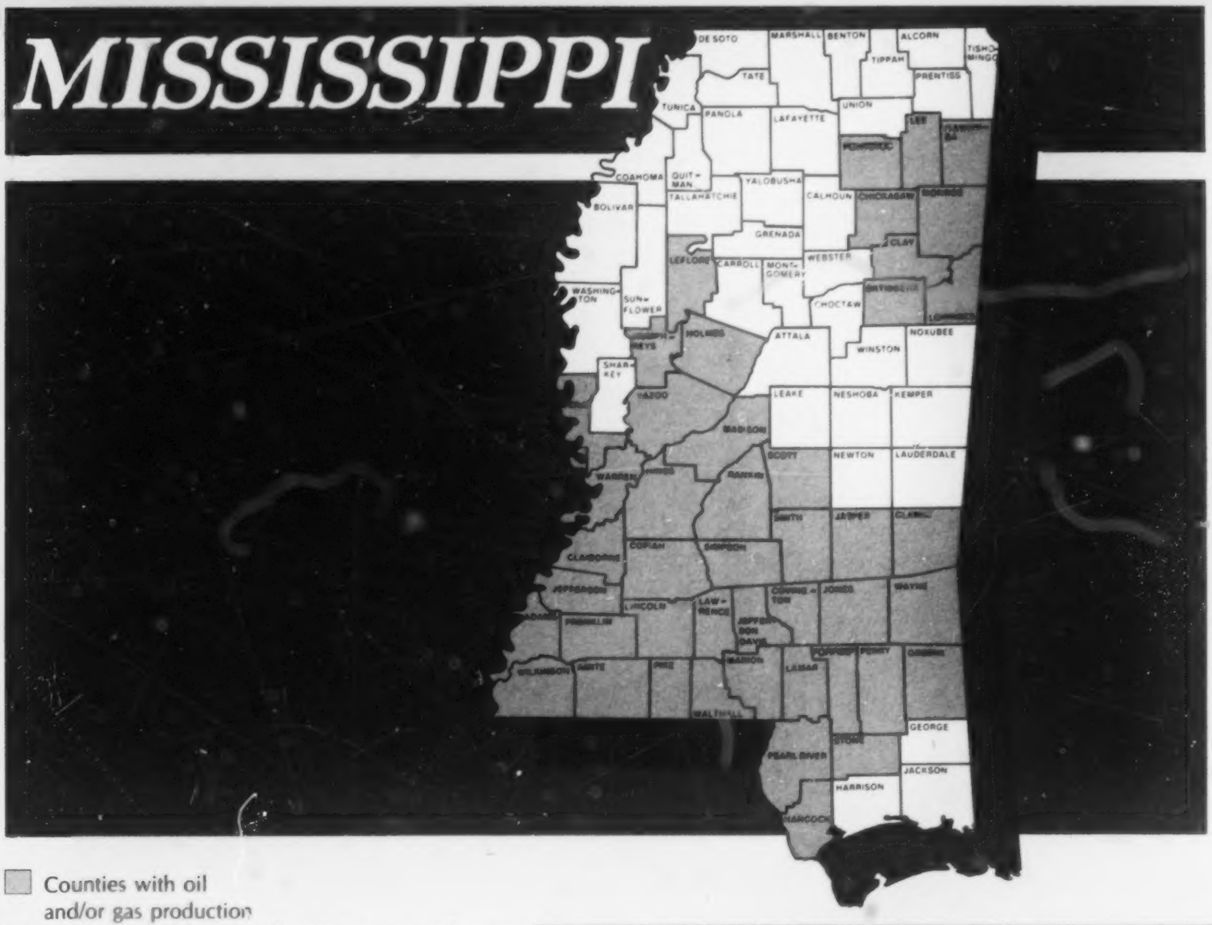
Percentage of total value of principal mineral production:

Crude oil — ranked 3rd	16%
Natural gas — ranked 2nd	20%

State Energy Contact

Michigan Geological Survey
Department of Natural Resources
P.O. Box 30028
Lansing, MI 48909
(517) 334-6907

MISSISSIPPI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GREENE
WALTHALL
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PEARL RIVER
STONE
JACKSON
HARRISON
HANCOCK

▨ Counties with oil and/or gas production

Background Information

Number of counties	82
With oil and/or gas production	45

First year of production:

Crude oil	1889
Natural gas	1923

Year and amount of peak production:

Crude oil — 65,119 thous. bbls.	1970
Natural gas — 181,238 MMcf	1981

Deepest producing well: (ft.)

Crude oil	21,533
Natural gas	21,727

Year and depth of deepest well drilled: (ft.)

1986	25,500

Cumulative number of total wells drilled as of 12/31/90: (excluding service wells)

Oil wells	7,808	32%
Gas wells	1,486	6%
Dry holes	15,060	62%
Total	25,354	100%

Cumulative crude oil wellhead value as of 12/31/90: (thous. $)..........$13,646,460

Cumulative production & new reserves as of 12/31/89: (latest available data)

	Crude oil	NGL	Total	Natural gas (Bcf)
	(mill. bbls.)			
Reserves	2,412	116	2,528	8,300
Production	2,194	104	2,298	7,192

Value of Oil and Gas

Average 1990 wellhead price:

Crude oil ($/bbl.)	$21.04
Natural gas ($/Mcf)	$1.77

Wellhead value of 1990 production: (thous. $)

Crude oil	$568,774
Natural gas	$172,846
Total	$741,620

Average 1990 natural gas price to: ($/Mcf)

Residential consumers	$5.21
Commercial consumers	$4.31
Industrial consumers	$2.51
Electric utilities	$1.83
All consumers	$2.80

Severance taxes paid in 1990 (thous. $)..........$47,631

1990 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	20	53	73
Gas	19	35	54
Dry	87	63	150
Service	- -	0	0
Total	126	151	277

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	233.4	574.5	807.9
Gas	133.2	261.7	394.9
Dry	695.0	510.0	1,205.0
Service	- -	0.0	0.0
Total	1,061.6	1,346.3	2,407.8

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled	96
New-field wildcat footage (thous. ft.)	805.0

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	14th	17th
Production	12th	17th
Reserves (1989)	13th	16th

Seismic crew months worked (1989)	3
Average rotary rigs active	13

Number of producing wells: (12/31/90)

Crude oil	2,169
Flowing	221
Artificial lift	1,948
Natural gas	629
Total	2,798

Average production:	thous. bbls.	thous. b/d
Crude oil	27,033	74
NGL (est.)	569	2
Total	27,602	76

Natural gas marketed production (MMcf)	97,653
Average output per producing well:	
Crude oil (bbls.)	12,463
Natural gas (Mcf)	155,251

Average number of employees in:

Oil and natural gas extraction	5,376
Refining	1,886
Transportation	2,252
Wholesale	2,557
Retail	7,140
Total petroleum industry	19,211

1989 Latest Available Data

Petroleum reserve position as of 12/31/89:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	23	1	24
Production	26	1	27
Net annual change	-3	0	-3
Proved reserves	218	12	230

Natural gas reserve position as of 12/31/89:

(Bcf)	Wet Gas	Dry Gas
New reserves	118	116
Production	156	155
Net annual change	-38	-39
Proved reserves	1,108	1,104

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	50,861	706,405	67.49
Gas	41,637	800,703	104.37
Dry	89,547	549,369	68.08
Total	182,045	634,302	73.76

Number of producing stripper wells	561
Number of stripper well abandonments	120

Stripper well crude oil production:

(bbls.)	707,530
(b/d)	1,938
Percentage of oil produced by stripper wells	3%

Stripper oil reserves as of 12/31/89: (thous. bbls.)

Primary	9,893
Secondary	4,187
Total	14,080

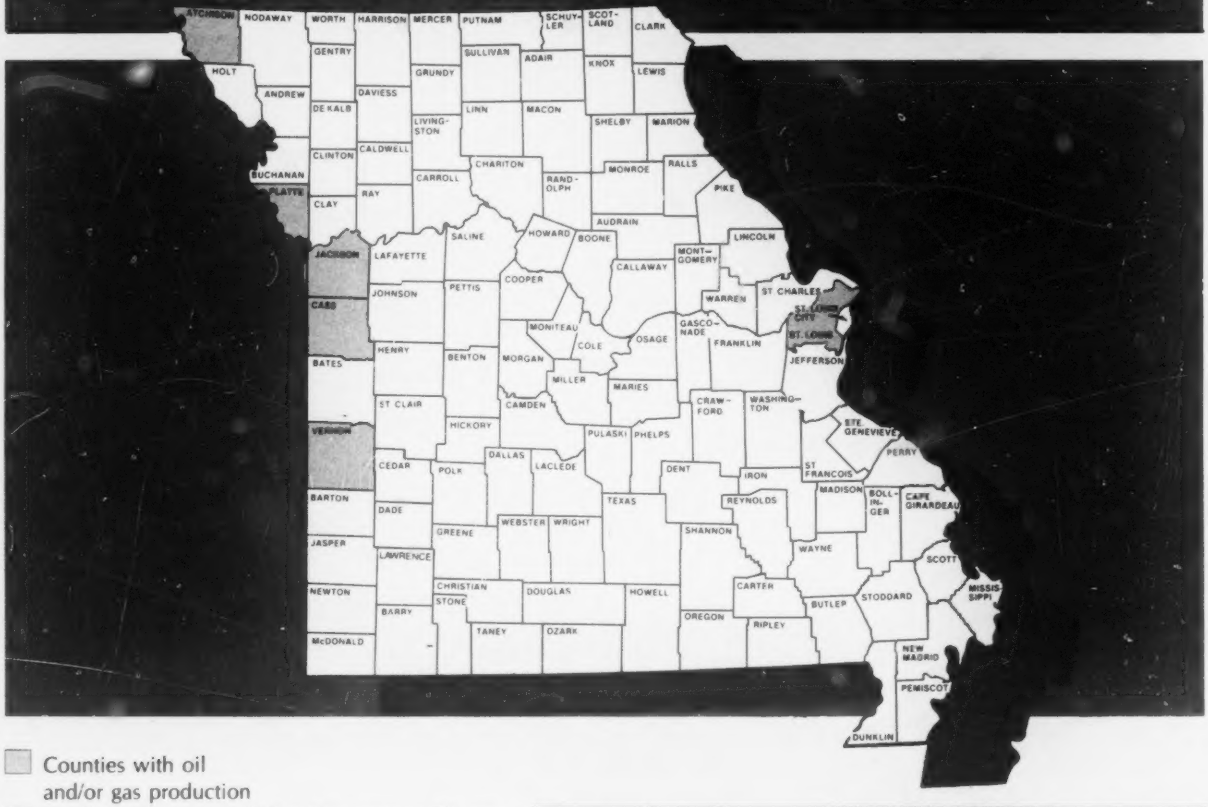
Percentage of total value of principal mineral production:

Crude oil — ranked 1st	61%
Natural gas — ranked 2nd	25%

State Energy Contact

Mississippi State Oil and Gas Board
P.O. Box 1332
Jackson, MS 39215
(601) 359-3725

MISSOURI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BUTLER
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OREGON
TANEY
OZARK
RIPLEY
McDONALD
NEW MADRID
PEMISCOT
DUNKLIN

▨ Counties with oil and/or gas production

Background Information

Number of counties	114
With oil and/or gas production	6

First year of production:

Crude oil	1889
Natural gas	1887

Year and amount of peak production:

Crude oil — 285 thous. bbls.	1984
Natural gas — 1,369 MMcf	1938

Deepest producing well: (ft.)

Crude oil	2,975
Natural gas	765

Year and depth of deepest well drilled: (ft.)

1988	10,089

Cumulative number of total wells drilled as of 12/31/90: (excluding service wells)

Oil wells	700	35%
Gas wells	189	10%
Dry holes	1,085	55%
Total	1,974	100%

Cumulative crude oil wellhead value as of 12/31/90: (thous. $) $66,337

Cumulative production & new reserves as of 12/31/90: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	N/A	N/A	N/A	N/A
Production	N/A	N/A	N/A	N/A

Value of Oil and Gas

Average 1990 wellhead price:

Crude oil ($/bbl.)	$21.50E
Natural gas ($/Mcf)	$3.80

Wellhead value of 1990 production: (thous. $)

Crude oil	$3,139
Natural gas	$19
Total	$3,158

Average 1990 natural gas price to: ($/Mcf)

Residential consumers	$5.21
Commercial consumers	$4.60
Industrial consumers	$4.37
Electric utilities	$1.75
All consumers	$4.90

Severance taxes paid in 1990 .... Not Applicable

1990 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	0	2	2
Gas	0	2	2
Dry	3	0	3
Service	- -	0	0
Total	3	4	7

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	0.0	4.2	4.2
Gas	0.0	0.7	0.7
Dry	2.7	0.0	2.7
Service	- -	0.0	0.0
Total	2.7	4.9	7.6

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled	3
New-field wildcat footage (thous. ft.)	2.7

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	28th	27th
Production	29th	32nd
Reserves (1989)	N/A	N/A

Seismic crew months worked (1989)	0
Average rotary rigs active	0

Number of producing wells: (12/31/90)	
Crude oil	854
Flowing	0
Artificial lift	854
Natural gas	N/A
Total	854

Average production:	thous. bbls.	thous. b/d
Crude oil	146	- -
NGL (est.)	0	- -
Total	146	- -

Natural gas marketed production (MMcf)	5E
Average output per producing well:	
Crude oil (bbls.)	171
Natural gas (Mcf)	N/A

Average number of employees in:	
Oil and natural gas extraction	74
Refining	308
Transportation	4,156
Wholesale	5,809
Retail	21,511
Total petroleum industry	31,858

1989 Latest Available Data

Petroleum reserve position as of 12/31/89:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	N/A	N/A	N/A
Production	N/A	N/A	N/A
Net annual change	N/A	N/A	N/A
Proved reserves	N/A	N/A	N/A

Natural gas reserve position as of 12/31/89:

(Bcf)	Wet Gas	Dry Gas
New reserves	N/A	N/A
Production	N/A	N/A
Net annual change	N/A	N/A
Proved reserves	N/A	N/A

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	N/A	- -	- -
Gas	N/A	- -	- -
Dry	N/A	- -	- -
Total	N/A	- -	- -

Number of producing stripper wells	668
Number of stripper well abandonments	41

Stripper well crude oil production:	
(bbls.)	115,248
(b/d)	316
Percentage of oil produced by stripper wells	85%

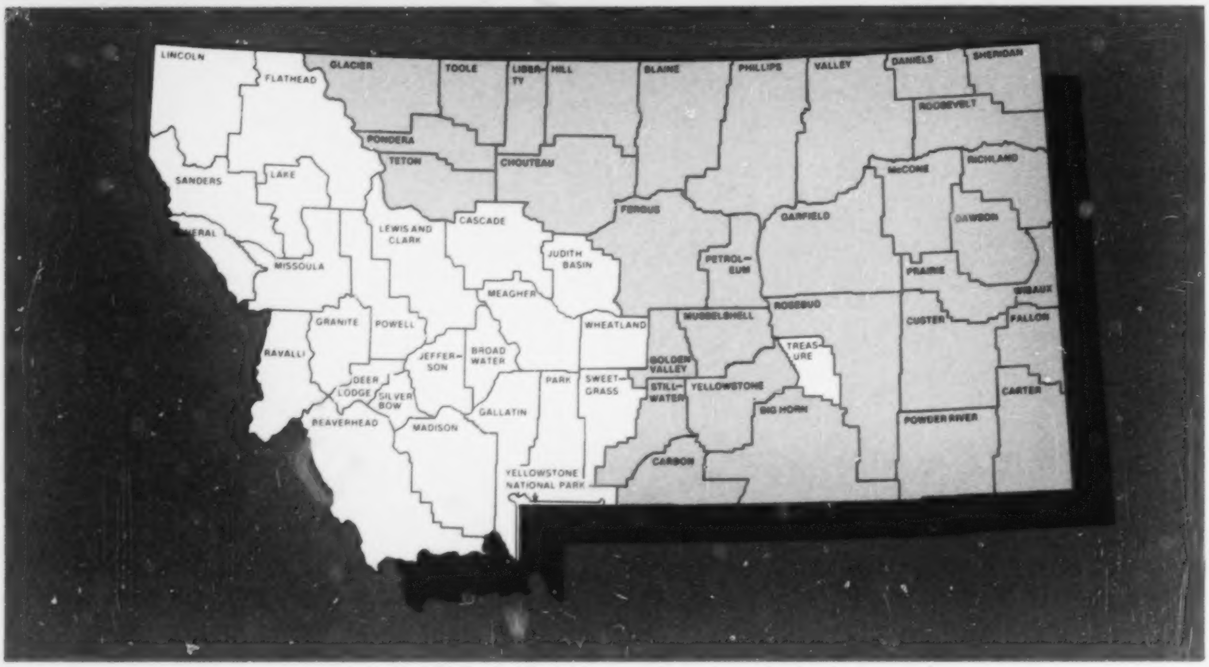
Stripper oil reserves as of 12/31/89: (thous. bbls.)	
Primary	948
Secondary	986
Total	1,934

Percentage of total value of principal mineral production:	
Crude oil — ranked 8th	Less than 1%
Natural gas — ranked 9th	Less than 1%

State Energy Contact

Missouri Department of Economic Development
Oil and Gas Research Division
P.O. Box 118
Jefferson City, MO 65101
(314) 751-3674

MONTANA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POWDER RIVER
CARBON
YELLOWSTONE NATIONAL PARK

▨ Counties with oil and/or gas production

Background Information

Number of counties	56
With oil and/or gas production	32

First year of production:

Crude oil	1916
Natural gas	1915

Year and amount of peak production:

Crude oil — 48,460 thous. bbls.	1968
Natural gas — 56,565 MMcf	1981

Deepest producing well: (ft.)

Crude oil	13,012
Natural gas	5,800

Year and depth of deepest well drilled: (ft.)

1989	17,818

Cumulative number of total wells drilled as of 12/31/90: (excluding service wells)

Oil wells	10,744	36%
Gas wells	4,649	16%
Dry holes	14,141	48%
Total	29,534	100%

Cumulative crude oil wellhead value as of 12/31/90: (thous. $) $10,925,952

Cumulative production & new reserves as of 12/31/89: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	1,516	50	1,566	3,169
Production	1,291	34	1,325	2,280

Value of Oil and Gas

Average 1990 wellhead price:

Crude oil ($/bbl.)	$21.59
Natural gas ($/Mcf)	$1.79

Wellhead value of 1990 production: (thous. $)

Crude oil	$427,698
Natural gas	$89,129
Total	$516,827

Average 1990 natural gas price to: ($/Mcf)

Residential consumers	$4.57
Commercial consumers	$4.36
Industrial consumers	$3.23
Electric utilities	$1.77
All consumers	$4.90

Severance taxes paid in 1990 (thous. $) $56,837

1990 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	9	29	38
Gas	11	179	190
Dry	60	40	100
Service	- -	2	2
Total	80	250	330

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	78.4	203.7	282.1
Gas	12.9	270.9	283.8
Dry	253.9	95.7	349.6
Service	- -	5.7	5.7
Total	345.2	576.0	921.2

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled	64
New-field wildcat footage (thous. ft.)	275.7

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	20th	14th
Production	14th	20th
Reserves (1989)	12th	18th

Seismic crew months worked (1989)	7
Average rotary rigs active	5

Number of producing wells: (12/31/90)

Crude oil	3,845
Flowing	349
Artificial lift	3,497
Natural gas	2,428
Total	6,273

Average production:	thous. bbls.	thous. b/d
Crude oil	19,810	54
NGL (est.)	569	2
Total	20,379	56

Natural gas marketed production (MMcf)	49,793

Average output per producing well:

Crude oil (bbls.)	5,152
Natural gas (Mcf)	20,508

Average number of employees in:

Oil and natural gas extraction	1,698
Refining	775
Transportation	456
Wholesale	1,209
Retail	3,485
Total petroleum industry	7,623

1989 Latest Available Data

Petroleum reserve position as of 12/31/89:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	5	6	11
Production	21	1	22
Net annual change	-16	5	-11
Proved reserves	225	16	241

Natural gas reserve position as of 12/31/89:

(Bcf)	Wet Gas	Dry Gas
New reserves	99	91
Production	44	43
Net annual change	55	48
Proved reserves	889	867

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	11,539	397,899	67.66
Gas	7,695	60,594	37.94
Dry	14,577	208,250	43.24
Total	33,812	149,611	47.59

Number of producing stripper wells	3,116
Number of stripper well abandonments	126

Stripper well crude oil production:

(bbls.)	2,447,609
(b/d)	6,706
Percentage of oil produced by stripper wells	12%

Stripper oil reserves as of 12/31/89: (thous. bbls.)

Primary	27,914
Secondary	5,630
Total	33,544

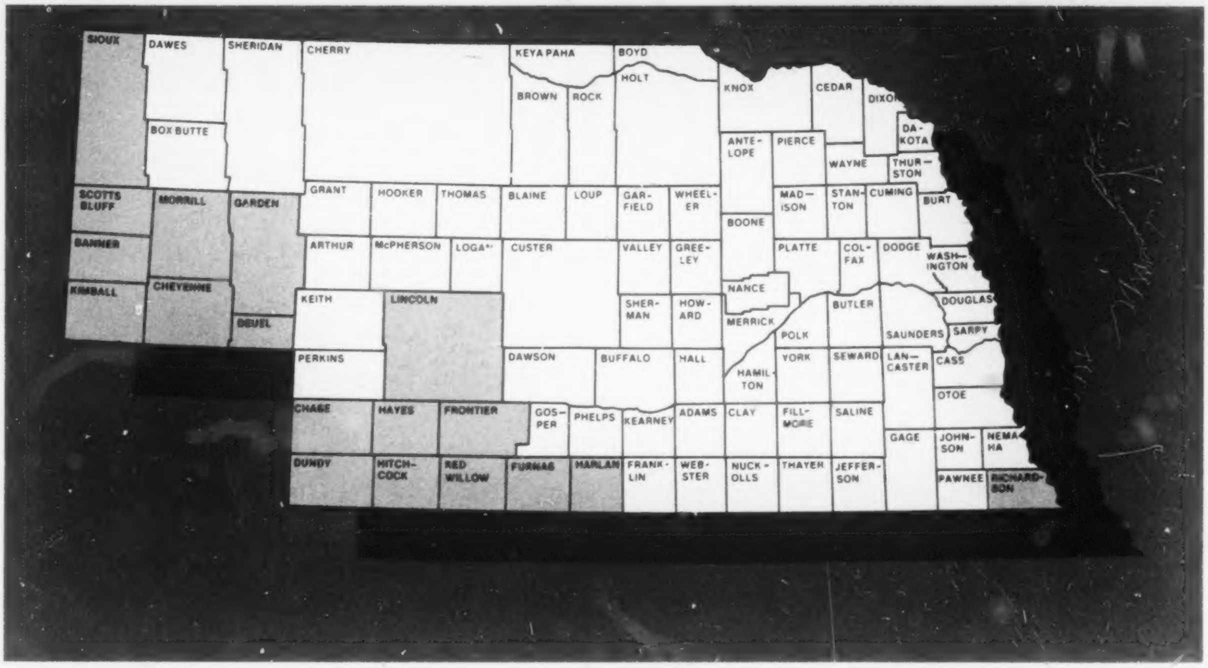
Percentage of total value of principal mineral production:

Crude oil — ranked 2nd	25%
Natural gas — ranked 6th	6%

State Energy Contact

Montana Department of Natural Resources
Board of Oil and Gas
1520 East Sixth Avenue
Helena, MT 59620
(406) 444-6675

NEBRASKA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▨ Counties with oil and/or gas production

Background Information

Number of counties	93
With oil and/or gas production	18
First year of production:	
Crude oil	1939
Natural gas	1950
Year and amount of peak production:	
Crude oil — 24,894 thous. bbls.	1962
Natural gas — 15,743 MMcf	1961
Deepest producing well: (ft.)	
Crude oil	8,457
Natural gas	5,832
Year and depth of deepest well drilled: (ft.)	
1979	9,971

Cumulative number of total wells drilled as of 12/31/90: (excluding service wells)

Oil wells	5,391	31%
Gas wells	222	1%
Dry holes	12,009	68%
Total	17,622	100%

Cumulative crude oil wellhead value as of 12/31/90: (thous. $)	$3,104,195

Cumulative production & new reserves as of 12/31/89: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	480	N/A	480	N/A
Production	448	N/A	448	N/A

Value of Oil and Gas

Average 1990 wellhead price:	
Crude oil ($/bbl.)	$21.94
Natural gas ($/Mcf)	$2.26
Wellhead value of 1990 production: (thous. $)	
Crude oil	$129,227
Natural gas	$1,883
Total	$131,110

Average 1990 natural gas price to: ($/Mcf)	
Residential consumers	$4.60
Commercial consumers	$3.83
Industrial consumers	$3.00
Electric utilities	$1.90
All consumers	$4.00
Severance taxes paid in 1990 (thous. $)	$3,365

1990 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	18	20	38
Gas	0	0	0
Dry	67	17	84
Service	- -	1	1
Total	85	38	123

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	106.2	98.1	204.3
Gas	0.0	0.0	0.0
Dry	331.0	93.7	424.7
Service	- -	3.8	3.8
Total	437.1	195.6	632.7

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled	57
New-field wildcat footage (thous. ft.)	278.8

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	19th	----
Production	19th	29th
Reserves (1989)	21st	N/A

Seismic crew months worked (1989)	51
Average rotary rigs active	2

Number of producing wells: (12/31/90)

Crude oil	1,440
Flowing	0
Artificial lift	1,440
Natural gas	N/A
Total	1,440

Average production:	thous. bbls.	thous. b/d
Crude oil	5,890	16
NGL (est.)	N/A	N/A
Total	5,890	16

Natural gas marketed production (MMcf)	833E

Average output per producing well:

Crude oil (bbls.)	4,090
Natural gas (Mcf)	N/A

Average number of employees in:

Oil and natural gas extraction	459
Refining	N/A
Transportation	1,462
Wholesale	2,479
Retail	7,508
Total petroleum industry	11,908

1989 Latest Available Data

Petroleum reserve position as of 12/31/89:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	-5	N/A	-5
Production	5	N/A	5
Net annual change	-10	N/A	-10
Proved reserves	32	N/A	32

Natural gas reserve position as of 12/31/89:

(Bcf)	Wet Gas	Dry Gas
New reserves	N/A	N/A
Production	N/A	N/A
Net annual change	N/A	N/A
Proved reserves	N/A	N/A

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	4,680	155,995	27.42
Gas	404	50,494	12.71
Dry	5,661	84,489	16.70
Total	10,745	102,329	19.85

Number of producing stripper wells	1,247
Number of stripper well abandonments	43

Stripper well crude oil production:

(bbls.)	2,110,732
(b/d)	5,783
Percentage of oil produced by stripper wells	34%

Stripper oil reserves as of 12/31/89 (thous. bbls.)

Primary	14,259
Secondary	5,471
Total	19,730

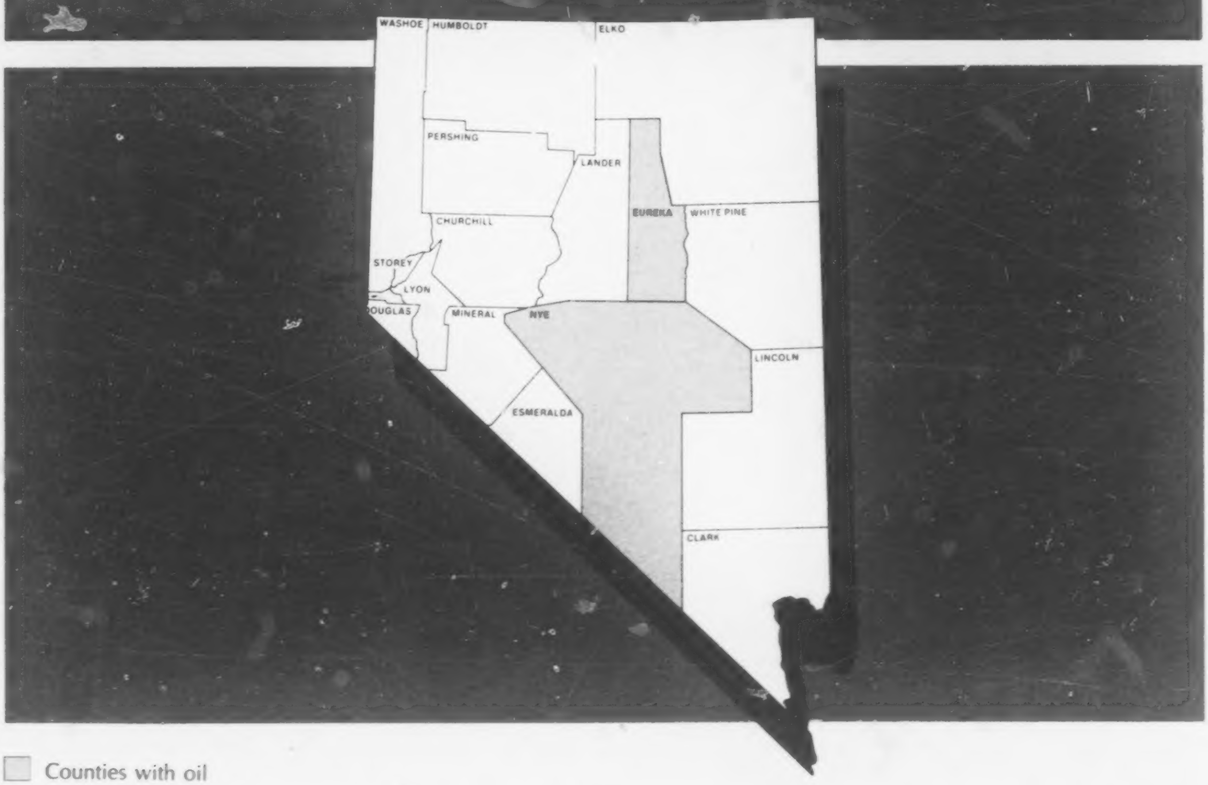
Percentage of total value of principal mineral production:

Crude oil — ranked 1st	51%
Natural gas — ranked 5th	1%

State Energy Contact

Nebraska Oil & Gas Conservation Commission
P.O. Box 399
Sidney, NE 69162
(308) 254-4595

NEVADA



▨ Counties with oil and/or gas production

Background Information

Number of counties	16
With oil and/or gas production	2

First year of production:

Crude oil	1954
Natural gas	Not Applicable

Year and amount of peak production:

Crude oil — 3,230 thous. bbls.	1988
Natural gas	Not Applicable

Deepest producing well: (ft.)

Crude oil	8,694
Natural gas	Not Applicable

Year and depth of deepest well drilled: (ft.)

1980	19,562

Cumulative number of total wells drilled as of 12/31/90: (excluding service wells)

Oil wells	71	16%
Gas wells	1	0%
Dry holes	377	84%
Total	449	100%

Cumulative crude oil wellhead value as of 12/31/90: (thous. $) $501,005

Cumulative production & new reserves as of 12/31/89: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	N/A	0	N/A	N/A
Production	N/A	0	N/A	N/A

Value of Oil and Gas

Average 1990 wellhead price:

Crude oil ($/bbl.)	$17.30E
Natural gas ($/Mcf)	Not Applicable

Wellhead value of 1990 production: (thous. $)

Crude oil	$69,408
Natural gas	Not Applicable
Total	$69,408

Average 1990 natural gas price to: ($/Mcf)

Residential consumers	$5.64
Commercial consumers	$4.35
Industrial consumers	$4.32
Electric utilities	$2.02
All consumers	$3.75

Severance taxes paid in 1990 (thous. $) $201

1990 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	3	6	9
Gas	0	0	0
Dry	19	3	22
Service	- -	5	5
Total	22	14	36

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	13.4	24.3	37.7
Gas	0.0	0.0	0.0
Dry	114.9	12.7	127.6
Service	- -	20.0	20.0
Total	128.3	57.0	185.3

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled	17
New-field wildcat footage (thous. ft.)	115.6

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	25th	- -
Production	22nd	- -
Reserves (1989)	N/A	N/A

Seismic crew months worked (1989)	8
Average rotary rigs active	1

Number of producing wells: (12/31/90)

Crude oil	46
Flowing	8
Artificial lift	38
Natural gas	N/A
Total	46

Average production:	thous. bbls.	thous. b/d
Crude oil	4,012	11
NGL (est.)	0	0
Total	4,012	11

Natural gas marketed production (MMcf)	N/A

Average output per producing well:

Crude oil (bbls.)	87,217
Natural gas (Mcf)	N/A

Average number of employees in:

Oil and natural gas extraction	205
Refining	0
Transportation	881
Wholesale	2,229
Retail	4,312
Total petroleum industry	7,627

1989 Latest Available Data

Petroleum reserve position as of 12/31/89:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	N/A	0	N/A
Production	N/A	0	N/A
Net annual change	N/A	0	N/A
Proved reserves	N/A	0	N/A

Natural gas reserve position as of 12/31/89:

(Bcf)	Wet Gas	Dry Gas
New reserves	N/A	N/A
Production	N/A	N/A
Net annual change	N/A	N/A
Proved reserves	N/A	N/A

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	N/A	- -	- -
Gas	N/A	- -	- -
Dry	N/A	- -	- -
Total	N/A	- -	- -

Number of producing stripper wells	0
Number of stripper well abandonments	0

Stripper well crude oil production:

(bbls.)	0
(b/d)	0
Percentage of oil produced by stripper wells	0

Stripper oil reserves as of 12/31/89: (thous. bbls.)

Primary	0
Secondary	0
Total	0

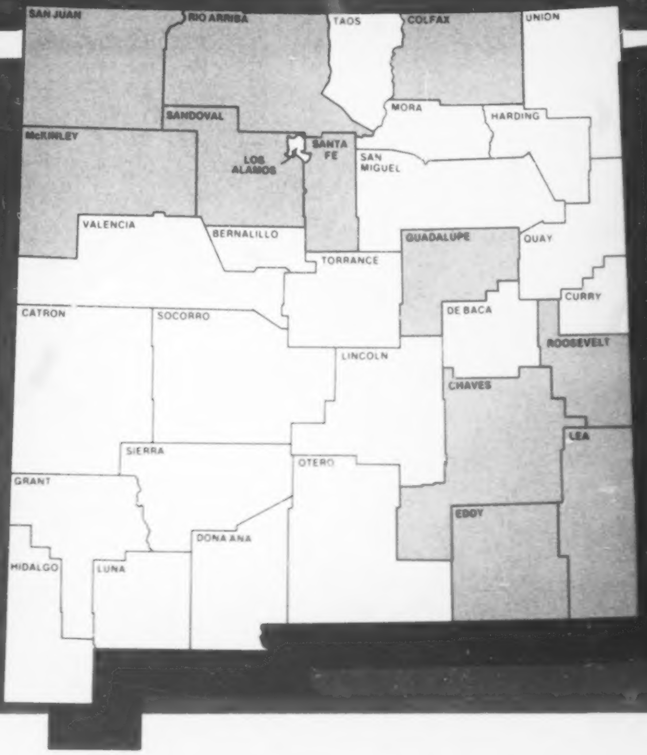
Percentage of total value of principal mineral production:

Crude oil — ranked 5th	2%
Natural gas	Not Applicable

State Energy Contact

Nevada Department of Minerals
400 West King Street
Suite 106
Carson City, NV 89710
(702) 885-5050

NEW MEXICO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▨ Counties with oil and/or gas production

Background Information

Number of counties	39
With oil and/or gas production	11

First year of production:

Crude oil	1911
Natural gas	1924

Year and amount of peak production:

Crude oil — 129,227 thous. bbls.	1969
Natural gas — 1,244,779 MMcf	1974

Deepest producing well: (ft.)

Crude oil	17,652
Natural gas	17,515

Year and depth of deepest well drilled: (ft.)

1968	22,926

Cumulative number of total wells drilled as of 12/31/90: (excluding service wells)

Oil wells	31,409	49%
Gas wells	19,367	30%
Dry holes	13,184	21%
Total	63,960	100%

Cumulative crude oil wellhead value as of 12/31/90: (thous. $) $30,852,260

Cumulative production & new reserves as of 12/31/89: (latest available data)

	Crude oil	NGL	Total	Natural gas (Bcf)
	(mill. bbls.)			
Reserves	6,113	2,304	8,417	56,815
Production	5,448	1,371	6,819	40,218

Value of Oil and Gas

Average 1990 wellhead price:

Crude oil ($/bbl.)	$22.43
Natural gas ($/Mcf)	$1.70

Wellhead value of 1990 production: (thous. $)

Crude oil	$1,508,350
Natural gas	$1,636,107
Total	$3,144,457

Average 1990 natural gas price to: ($/Mcf)

Residential consumers	$5.67
Commercial consumers	$4.38
Industrial consumers	$3.69
Electric utilities	$1.97
All consumers	$3.96

Severance taxes paid in 1990 (thous. $) $253,263

1990 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	24	393	417
Gas	11	719	730
Dry	44	84	128
Service	- -	19	19
Total	79	1,2[illegible]5	1,294

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	172.3	2,507.0	2,679.3
Gas	80.1	2,692.7	2,772.8
Dry	269.1	514.9	784.0
Service	- -	73.2	73.2
Total	521.5	5,787.8	6,309.3

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled	24
New-field wildcat footage (thous. ft.)	136.2

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	7th	5th
Production	7th	4th
Reserves (1989)	7th	4th

Seismic crew months worked (1989)	38
Average rotary rigs active	50

Number of producing wells: (12/31/90)

Crude oil	18,546
Flowing	3,110
Artificial lift	15,436
Natural gas	19,537
Total	38,083

Average production:	thous. bbls.	thous. b/d
Crude oil	67,247	184
NGL (est.)	36,584	100
Total	103,831	284

Natural gas marketed production (MMcf)	962,416

Average output per producing well:

Crude oil (bbls.)	3,626
Natural gas (Mcf)	49,261

Average number of employees in:

Oil and natural gas extraction	9,955
Refining	621
Transportation	2,793
Wholesale	2,246
Retail	4,819
Total petroleum industry	20,434

1989 Latest Available Data

Petroleum reserve position as of 12/31/89:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	68	-43	25
Production	64	47	111
Net annual change	4	-90	-86
Proved reserves	665	933	1,598

Natural gas reserve position as of 12/31/89:

(Bcf)	Wet Gas	Dry Gas
New reserves	-1,067	-972
Production	819	760
Net annual change	-1,886	-1,732
Proved reserves	16,597	15,434

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	132,247	390,111	60.75
Gas	145,154	348,091	79.49
Dry	36,871	307,254	49.60
Total	314,272	358,758	66.20

Number of producing stripper wells	15,050
Number of stripper well abandonments	882

Stripper well crude oil production:

(bbls.)	14,309,111
(b/d)	39,203
Percentage of oil produced by stripper wells	21%

Stripper oil reserves as of 12/31/89: (thous. bbls.)

Primary	60,196
Secondary	37,684
Total	97,880

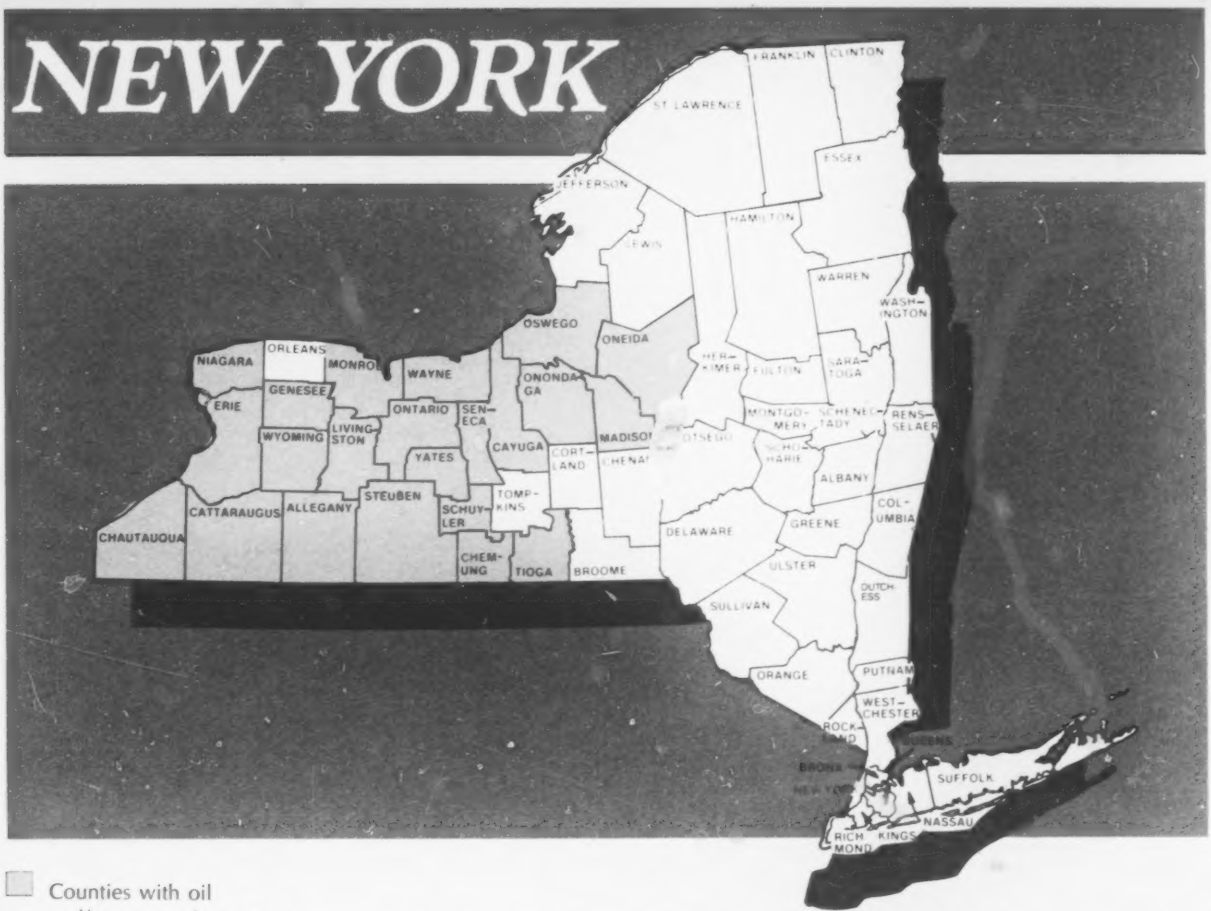
Percentage of total value of principal mineral production:

Crude oil — ranked 2nd	29%
Natural gas — ranked 1st	31%

State Energy Contact

New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87504
(505) 827-5800

NEW YORK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BRONX
NEW YORK
SUFFOLK
NASSAU
RICHMOND
KINGS

▨ Counties with oil and/or gas production

Background Information

Number of counties	62
With oil and/or gas production	25
First year of production:	
Crude oil	1865
Natural gas	1885
Year and amount of peak production:	
Crude oil — 6,685 thous. bbls.	1882
Natural gas — 39,402 MMcf	1938
Deepest producing well: (ft.)	
Crude oil	4,634
Natural gas	7,941
Year and depth of deepest well drilled: (ft.)	
1958	13,500

Cumulative number of total wells drilled as of 12/31/90: (excluding service wells)

Oil wells	9,371	60%
Gas wells	5,055	33%
Dry holes	1,130	7%
Total	15,556	100%

Cumulative crude oil wellhead value as of 12/31/90: (thous. $) $1,046,130

Cumulative production & new reserves as of 12/31/89: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	N/A	N/A	N/A	1,113
Production	N/A	N/A	N/A	745

Value of Oil and Gas

Average 1990 wellhead price:	
Crude oil ($/bbl.)	$23.32
Natural gas ($/Mcf)	$2.23
Wellhead value of 1990 production: (thous. $)	
Crude oil	$9,701
Natural gas	$44,274
Total	$53,975

Average 1990 natural gas price to: ($/Mcf)	
Residential consumers	$7.45
Commercial consumers	$5.54
Industrial consumers	$4.75
Electric utilities	$2.46
All consumers	$5.22

Severance taxes paid in 1990 (thous. $) .... N/A

1990 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	0	0	0
Gas	1	1	2
Dry	2	5	7
Service	- -	0	0
Total	3	6	9

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	0.0	0.0	0.0
Gas	1.9	3.0	4.9
Dry	8.7	17.7	26.4
Service	- -	0.0	0.0
Total	10.6	20.7	31.3

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled	1
New-field wildcat footage (thous. ft.)	3.9

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	----	26th
Production	28th	21st
Reserves (1989)	N/A	21st

Seismic crew months worked (1989)	0
Average rotary rigs active	1

Number of producing wells: (12/31/90)

Crude oil	4,043
Flowing	1
Artificial lift	4,042
Natural gas	5,406
Total	9,449

Average production:	thous. bbls.	thous. b/d
Crude oil	416	1
NGL	N/A	N/A
Total	416	1

Natural gas marketed production (MMcf)	19,854E

Average output per producing well:

Crude oil (bbls.)	103
Natural gas (Mcf)	3,673

Average number of employees in:

Oil and natural gas extraction	1,583
Refining	2,517
Transportation	6,769
Wholesale	7,977
Retail	28,056
Total petroleum industry	46,902

1989 Latest Available Data

Petroleum reserve position as of 12/31/89:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	N/A	N/A	N/A
Production	N/A	N/A	N/A
Net annual change	N/A	N/A	N/A
Proved reserves	N/A	N/A	N/A

Natural gas reserve position as of 12/31/89:

(Bcf)	Wet Gas	Dry Gas
New reserves	39	39
Production	22	22
Net annual change	17	17
Proved reserves	368	368

Cost of drilling and equipping wells:

(Appalachia)	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	79,277	90,914	24.13
Gas	307,568	153,248	34.88
Dry	16,294	107,905	27.02
Total	403,138	133,049	31.73

Number of producing stripper wells	3,968
Number of stripper well abandonments	201

Stripper well crude oil production:

(bbls.)	431,459
(b/d)	1,182
Percentage of oil produced by stripper wells	87%

Stripper oil reserves as of 12/31/89: (thous. bbls.)

Primary	1,060
Secondary	506
Total	1,566

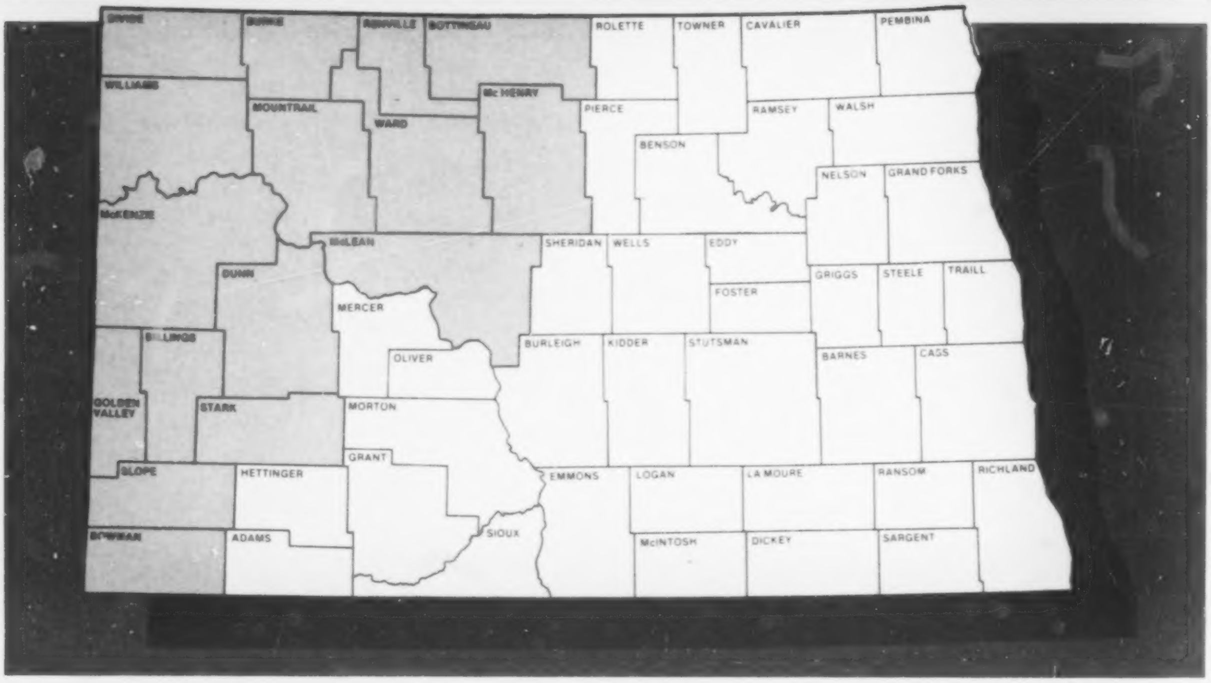
Percentage of total value of principal mineral production:

Crude oil — ranked 7th	1%
Natural gas — ranked 6th	6%

State Energy Contact

New York State Department of
Environmental Conservation
50 Wolf Road
Albany, NY 12223
(518) 457-7480

NORTH DAKOTA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▨ Counties with oil
and/or gas production

Background Information

Number of counties	53
With oil and/or gas production	16

First year of production:

Crude oil	1951
Natural gas	1907

Year and amount of peak production:

Crude oil — 52,652 thous. bbls.	1984
Natural gas — 72,633 MMcf	1985

Deepest producing well: (ft.)

Crude oil	15,380
Natural gas	14,636

Year and depth of deepest well drilled: (ft.)

1978	15,380

Cumulative number of total wells drilled as of 12/31/90:
(excluding service wells)

Oil wells	5,847	51%
Gas wells	103	1%
Dry holes	5,553	48%
Total	11,503	100%

Cumulative crude oil wellhead value as of 12/31/90:
(thous. $) $14,786,289

Cumulative production & new reserves as of 12/31/89:
(latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	1,226	173	1,399	2,101
Production	980	114	1,094	1,476

Value of Oil and Gas

Average 1990 wellhead price:

Crude oil ($/bbl.)	$21.93
Natural gas ($/Mcf)	$0.95

Wellhead value of 1990 production: (thous. $)

Crude oil	$805,182
Natural gas	$54,679
Total	$859,861

Average 1990 natural gas price to: ($/Mcf)

Residential consumers	$4.70
Commercial consumers	$4.21
Industrial consumers	$3.32
Electric utilities	$4.01
All consumers	$4.41

Severance taxes paid in 1990 (thous. $) $79,668

1990 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	69	93	162
Gas	0	4	4
Dry	61	28	89
Service	- -	1	1
Total	130	126	256

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	723.3	869.6	1,592.9
Gas	0.0	45.2	45.2
Dry	450.8	184.7	635.5
Service	- -	8.4	8.4
Total	1,174.1	1,107.9	2,282.0

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled	70
New-field wildcat footage (thous. ft.)	604.9

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	10th	24th
Production	9th	19th
Reserves (1989)	11th	20th

Seismic crew months worked (1989)	4
Average rotary rigs active	20

Number of producing wells: (12/31/90)

Crude oil	3,546
Flowing	536
Artificial lift	3,010
Natural gas	103
Total	3,649

Average production:	thous. bbls.	thous. b/d
Crude oil	36,716	101
NGL (est.)	3,892	11
Total	40,608	112

Natural gas marketed production (MMcf)	57,557
Average output per producing well:	
Crude oil (bbls.)	10,354
Natural gas (Mcf)	558,806

Average number of employees in:

Oil and natural gas extraction	2,883
Refining	338
Transportation	1,006
Wholesale	2,061
Retail	2,514
Total petroleum industry	8,802

1989 Latest Available Data

Petroleum reserve position as of 12/31/89:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	65	12	77
Production	35	5	40
Net annual change	30	7	37
Proved reserves	246	59	305

Natural gas reserve position as of 12/31/89:

(Bcf)	Wet Gas	Dry Gas
New reserves	93	75
Production	61	55
Net annual change	32	20
Proved reserves	625	561

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	76,971	740,109	77.08
Gas	4,024	1,341,491	94.38
Dry	20,223	284,836	39.38
Total	101,219	568,647	65.10

Number of producing stripper wells	1,180
Number of stripper well abandonments	91

Stripper well crude oil production:

(bbls.)	1,925,341
(b/d)	5,275
Percentage of oil produced by stripper wells	5%

Stripper oil reserves as of 12/31/89: (thous. bbls.)

Primary	35,449
Secondary	30,811
Total	66,260

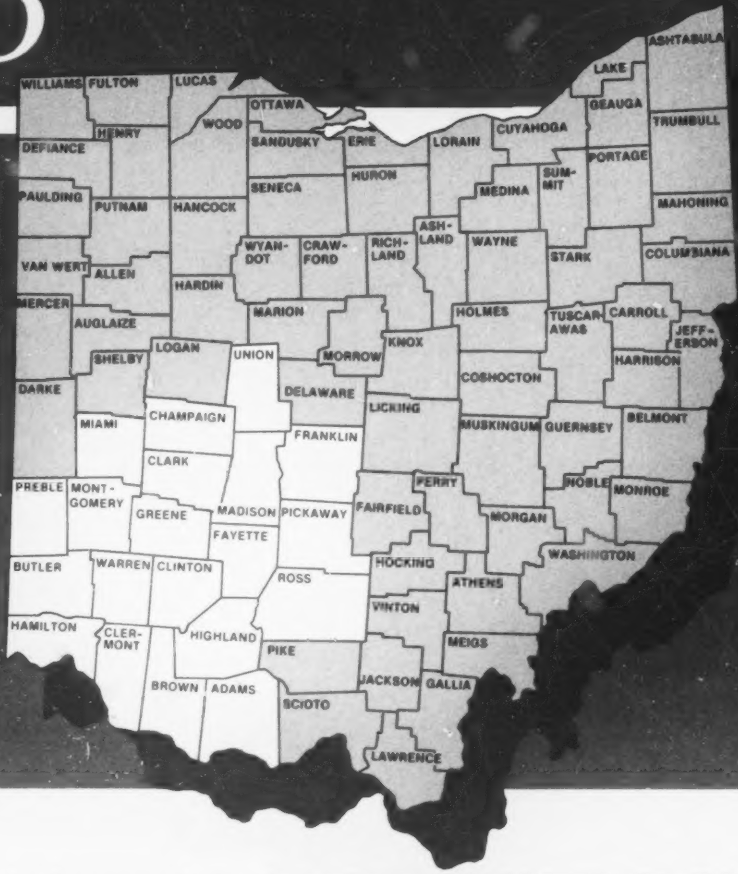
Percentage of total value of principal mineral production:

Crude oil — ranked 1st	66%
Natural gas — ranked 3rd	10%

State Energy Contact

North Dakota Industrial Commission
Oil and Gas Division
900 East Boulevard
Bismarck, ND 58505
(701) 224-2969

OHIO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LAWRENCE

▨ Counties with oil and/or gas production

Background Information

Number of counties	88
With oil and/or gas production	68

First year of production:

Crude oil	1860
Natural gas	1884

Year and amount of peak production:

Crude oil — 23,941 thous. bbls.	1896
Natural gas — 166,735 MMcf	1989

Deepest producing well: (ft.)

Crude oil	7,805
Natural gas	8,794

Year and depth of deepest well drilled: (ft.)

1967	11,442

Cumulative number of total wells drilled as of 12/31/90: (excluding service wells)

Oil wells	80,967	48%
Gas wells	49,134	29%
Dry holes	37,300	23%
Total	167,401	100%

Cumulative crude oil wellhead value as of 12/31/90: (thous. $) $6,004,953

Cumulative production & new reserves as of 12/31/89: (latest available data)

	Crude oil	NGL	Total	Natural gas (Bcf)
		(mill. bbls.)		
Reserves	1,028	N/A	1,028	8,215
Production	972	N/A	972	6,940

Value of Oil and Gas

Average 1990 wellhead price:

Crude oil ($/bbl.)	$23.09
Natural gas ($/Mcf)	$2.54

Wellhead value of 1990 production: (thous. $)

Crude oil	$231,085
Natural gas	$395,089
Total	$626,174

Average 1990 natural gas price to: ($/Mcf)

Residential consumers	$5.28
Commercial consumers	$4.67
Industrial consumers	$3.96
Electric utilities	$2.57
All consumers	$5.02

Severance taxes paid in 1990 (thous. $) $4,674

1990 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	10	722	732
Gas	11	297	308
Dry	30	76	106
Service	- -	0	0
Total	51	1,095	1,146

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	60.4	3,091.4	3,151.8
Gas	64.5	1,347.3	1,411.8
Dry	139.6	260.7	400.3
Service	- -	0.0	0.0
Total	264.5	4,699.4	4,963.9

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled	13
New-field wildcat footage (thous. ft.)	49.3

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	5th	11th
Production	18th	14th
Reserves (1989)	17th	15th

Seismic crew months worked (1989)	2
Average rotary rigs active	12

Number of producing wells: (12/31/90)

Crude oil	30,089
Flowing	375
Artificial lift	29,714
Natural gas	34,697
Total	64,768

Average production:	thous. bbls.	thous. b/d
Crude oil	10,008	27
NGL	N/A	N/A
Total	10,008	27

Natural gas marketed production (MMcf)	155,547E

Average output per producing well:

Crude oil (bbls.)	333
Natural gas (Mcf)	4,483

Average number of employees in:

Oil and natural gas extraction	5,819
Refining	7,742
Transportation	8,047
Wholesale	6,561
Retail	35,219
Total petroleum industry	63,388

1989 Latest Available Data

Petroleum reserve position as of 12/31/89:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	1	N/A	1
Production	9	N/A	9
Net annual change	-8	N/A	-8
Proved reserves	56	N/A	56

Natural gas reserve position as of 12/31/89:

(Bcf)	Wet Gas	Dry Gas
New reserves	176	176
Production	130	130
Net annual change	46	46
Proved reserves	1,275	1,275

Cost of drilling and equipping wells:

(Appalachia)	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	79,278	90,914	24.13
Gas	307,568	153,248	34.88
Dry	16,294	107,905	27.02
Total	403,138	133,049	31.73

Number of producing stripper wells	29,634
Number of stripper well abandonments	347

Stripper well crude oil production:

(bbls.)	7,423,867
(b/d)	20,339
Percentage of oil produced by stripper wells	73%

Stripper oil reserves as of 12/31/89: (thous. bbls.)

Primary	63,200
Secondary	209
Total	63,409

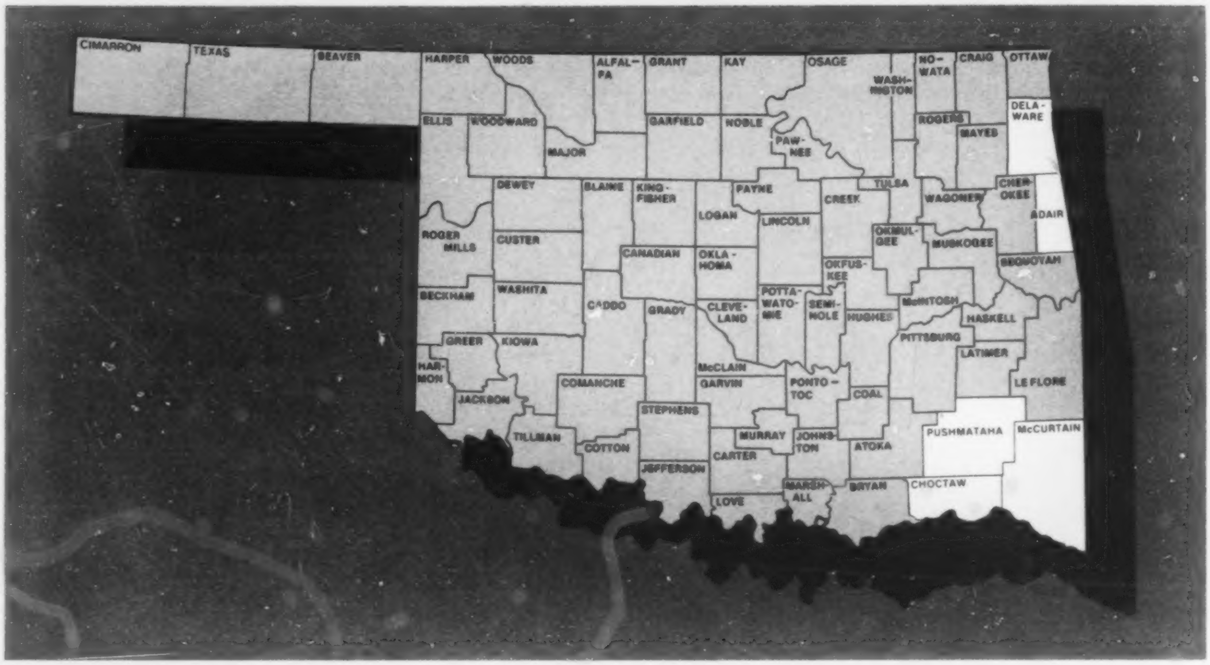
Percentage of total value of principal mineral production:

Crude oil — ranked 4th	8%
Natural gas — ranked 2nd	18%

State Energy Contact

Ohio Department of Natural Resources
Division of Oil and Gas
Fountain Square Bldg. A
Columbus, OH 43224
(614) 265-6917

OKLAHOMA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PUSHMATAHA
McCURTAIN
CARTER
JEFFERSON
MARSHALL
BRYAN
CHOCTAW
LOVE

▨ Counties with oil and/or gas production

Background Information

Number of counties	77
With oil and/or gas production	72

First year of production:

Crude oil	1891
Natural gas	1902

Year and amount of peak production:

Crude oil — 277,775 thous. bbls.	1927
Natural gas — 2,019,199 MMcf	1981

Deepest producing well: (ft.)

Crude oil	22,850
Natural gas	25,152

Year and depth of deepest well drilled: (ft.)

1974	31,441

Cumulative number of total wells drilled as of 12/31/90: (excluding service wells)

Oil wells	235,334	59%
Gas wells	48,356	12%
Dry holes	115,113	29%
Total	398,803	100%

Cumulative crude oil wellhead value as of 12/31/90: (thous. $) $74,600,701

Cumulative production & new reserves as of 12/31/89: (latest available data)

	Crude oil	NGL	Total	Natural gas (Bcf)
	(mill. bbls.)			
Reserves	13,949	3,786	17,735	85,763
Production	13,160	3,132	16,292	69,303

Value of Oil and Gas

Average 1990 wellhead price:

Crude oil ($/bbl.)	$22.92
Natural gas ($/Mcf)	$1.57

Wellhead value of 1990 production: (thous. $)

Crude oil	$2,573,320
Natural gas	$3,429,213
Total	$6,002,533

Average 1990 natural gas price to: ($/Mcf)

Residential consumers	$4.75
Commercial consumers	$3.98
Industrial consumers	$1.70
Electric utilities	$3.14
All consumers	$3.12

Severance taxes paid in 1990 (thous. $) $403,620

1990 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	26	986	1,012
Gas	54	788	842
Dry	176	643	819
Service	- -	73	73
Total	256	2,490	2,746

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	181.4	4,200.0	4,381.4
Gas	519.6	5,638.4	6,158.0
Dry	1,138.3	3,349.9	4,488.2
Service	- -	154.5	154.6
Total	1,893.3	13,262.9	15,182.2

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled	104
New-field wildcat footage (thous. ft.)	680.2

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	3rd	3rd
Production	5th	3rd
Reserves (1989)	6th	3rd

Seismic crew months worked (1989)	79
Average rotary rigs active	125

Number of producing wells: (12/31/90)

Crude oil	81,667
Flowing	4,080
Artificial lift	77,587
Natural gas	24,110
Total	105,777

Average production:	thous. bbls.	thous. b/d
Crude oil	112,274	308
NGL (est.)	65,384	179
Total	177,658	487

Natural gas marketed production (MMcf)	2,184,212
Average output per producing well:	
Crude oil (bbls.)	1,375
Natural gas (Mcf)	90,594

Average number of employees in:

Oil and natural gas extraction	41,857
Refining	5,139
Transportation	6,642
Wholesale	4,777
Retail	8,262
Total petroleum industry	66,677

1989 Latest Available Data

Petroleum reserve position as of 12/31/89:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	92	-27	65
Production	99	84	183
Net annual change	-7	-111	-118
Proved reserves	789	654	1,443

Natural gas reserve position as of 12/31/89:

(Bcf)	Wet Gas	Dry Gas
New reserves	1,367	1,404
Production	2,084	1,983
Net annual change	-717	-579
Proved reserves	16,733	15,916

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	242,038	245,225	54.56
Gas	578,408	663,312	91.00
Dry	203,419	248,072	47.07
Total	1,023,865	382,182	67.75

Number of producing stripper wells	70,741
Number of stripper well abandonments	2,138

Stripper well crude oil production:

(bbls.)	81,675,477
(b/d)	223,768
Percentage of oil produced by stripper wells	70%

Stripper oil reserves as of 12/31/89: (thous. bbls.)

Primary	193,031
Secondary	197,719
Total	390,750

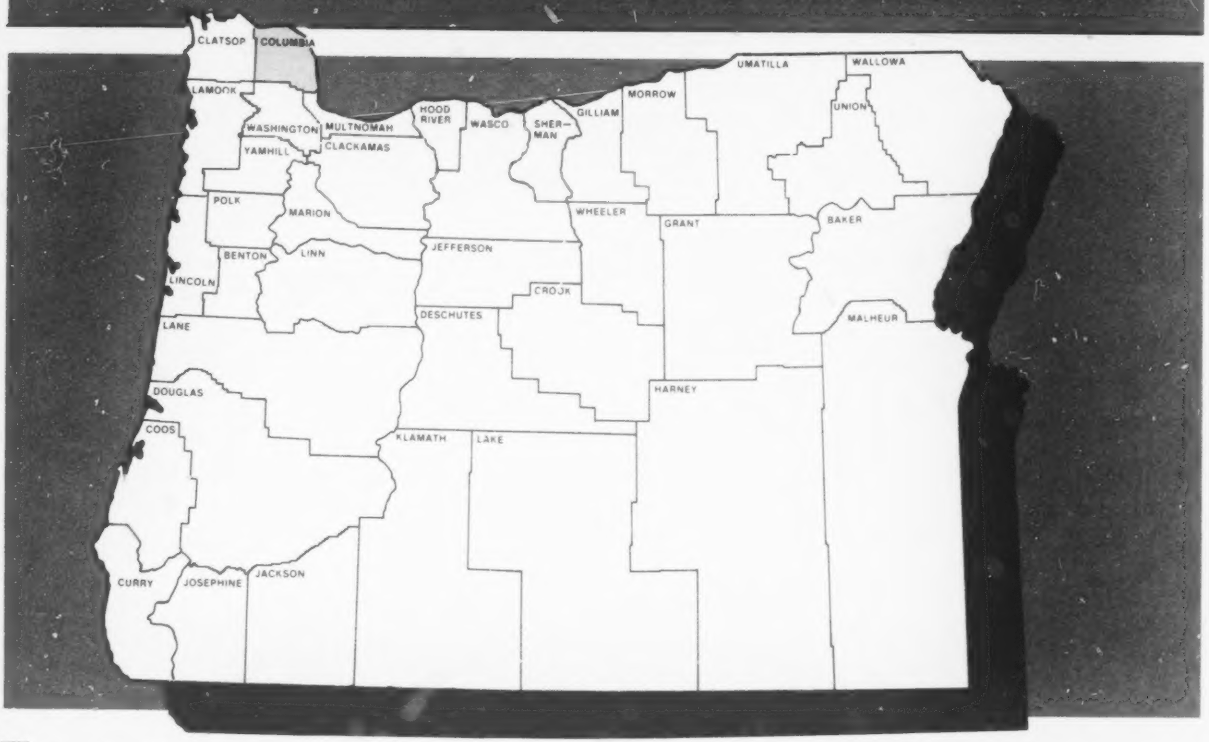
Percentage of total value of principal mineral production:

Crude oil — ranked 2nd	36%
Natural gas — ranked 1st	59%

State Energy Contact

Oklahoma Corporation Commission
Oil and Gas Division
Jim Thorpe Building
Oklahoma City, OK 73105
(405) 521-2301

OREGON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LAKE
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JOSEPHINE
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▨ Counties with oil and/or gas production

Background Information

Number of counties	36
With oil and/or gas production	1

First year of production:

Crude oil	Not Applicable
Natural gas	1979

Year and amount of peak production:

Crude oil	Not Applicable
Natural gas — 5,000 MMcf	1980/1981

Deepest producing well: (ft.)

Crude oil	Not Applicable
Natural gas	3,027

Year and depth of deepest well drilled: (ft.)

1979	13,177

Cumulative number of total wells drilled as of 12/31/90: (excluding service wells)

Oil wells	0	0%
Gas wells	36	10%
Dry holes	317	90%
Total	353	100%

Cumulative crude oil wellhead value as of 12/31/90: (thous. $) .... Not Applicable

Cumulative production & new reserves as of 12/31/89: (latest available data)

	Crude oil	NGL	Total	Natural gas (Bcf)
	(mill. bbls.)			
Reserves	N/A	N/A	- -	N/A
Production	N/A	N/A	- -	N/A

Value of Oil and Gas

Average 1990 wellhead price:

Crude oil ($/bbl.)	Not Applicable
Natural gas ($/Mcf)	$1.39

Wellhead value of 1990 production: (thous. $)

Crude oil	Not Applicable
Natural gas	$3,344
Total	$3,344

Average 1990 natural gas price to: ($/Mcf)

Residential consumers	$6.26
Commercial consumers	$4.87
Industrial consumers	$3.24
Electric utilities	N/A
All consumers	$5.09

Severance taxes paid in 1990 (thous. $) $111

1990 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	0	0	0
Gas	1	1	2
Dry	0	1	1
Service	- -	0	0
Total	1	2	3

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	0.0	0.0	0.0
Gas	2.1	2.3	4.4
Dry	0.0	2.2	2.2
Service	- -	0.0	0.0
Total	2.1	4.5	6.6

Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled	0
New-field wildcat footage (thous. ft.)	0.0

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	- -	25th
Production	- -	25th
Reserves (1989)	- -	N/A

Seismic crew months worked (1989)	2
Average rotary rigs active	0

Number of producing wells: (12/31/90)

Crude oil	0
Flowing	0
Artificial lift	0
Natural gas	N/A
Total	0

Average production:	thous. bbls.	thous. b/d
Crude oil	0	0
NGL (est.)	0	0
Total	0	0

Natural gas marketed production (MMcf)	2,406E

Average output per producing well:

Crude oil (bbls.)	N/A
Natural gas (Mcf)	N/A

Average number of employees in:

Oil and natural gas extraction	42
Refining	78
Transportation	1,426
Wholesale	2,308
Retail	8,954
Total petroleum industry	12,808

1989 Latest Available Data

Petroleum reserve position as of 12/31/89:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	- -	- -	N/A
Production	- -	- -	N/A
Net annual change	- -	- -	N/A
Proved reserves	- -	- -	N/A

Natural gas reserve position as of 12/31/89:

(Bcf)	Wet Gas	Dry Gas
New reserves	N/A	N/A
Production	N/A	N/A
Net annual change	N/A	N/A
Proved reserves	N/A	N/A

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	N/A	- - -	- - -
Gas	N/A	- - -	- - -
Dry	N/A	- - -	- - -
Total	N/A	- - -	- - -

Number of producing stripper wells	0
Number of stripper well abandonments	0

Stripper well crude oil production:

(bbls.)	0
(b/d)	0
Percentage of oil produced by stripper wells	0

Stripper oil reserves as of 12/31/89: (thous. bbls.)

Primary	0
Secondary	0
Total	0

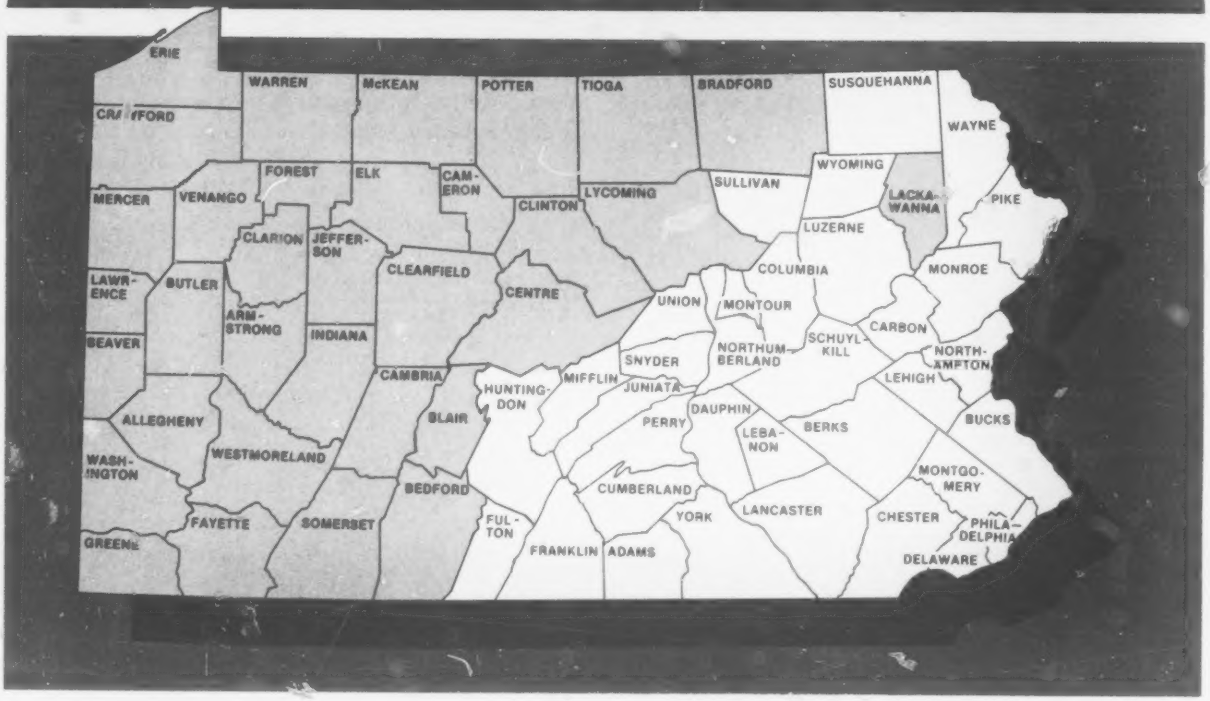
Percentage of total value of principal mineral production:

Crude oil	Not Applicable
Natural gas — ranked 4th	3%

State Energy Contact

Oregon Department of Geology and
Mineral Industries
910 State Office Building
Portland, OR 97201
(503) 229-5580

PENNSYLVANIA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▨ Counties with oil and/or gas production

Background Information

Number of counties	67
With oil and/or gas production	33

First year of production:

Crude oil	1859
Natural gas	1881

Year and amount of peak production:

Crude oil — 31,424 thous. bbls.	1891
Natural gas — 166,342 MMcf	1984

Deepest producing well: (ft.)

Crude oil	8,484
Natural gas	19,365

Year and depth of deepest well drilled: (ft.)

1974	21,640

Cumulative number of total wells drilled as of 12/31/90: (excluding service wells)

Oil wells	250,460	78%
Gas wells	33,878	10%
Dry holes	38,648	12%
Total	322,986	100%

Cumulative crude oil wellhead value as of 12/31/90: (thous. $) $4,193,556

Cumulative production & new reserves as of 12/31/89: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	1,349	N/A	1,349	116,914
Production	1,323	N/A	1,323	10,505

Value of Oil and Gas

Average 1990 wellhead price:

Crude oil ($/bbl.)	$23.00
Natural gas ($/Mcf)	$2.00

Wellhead value of 1990 production: (thous. $)

Crude oil	$60,789
Natural gas	$373,480
Total	$434,269

Average 1990 natural gas price to: ($/Mcf)

Residential consumers	$6.60
Commercial consumers	$6.00
Industrial consumers	$4.29
Electric utilities	$3.05
All consumers	$6.16

Severance taxes paid in 1990 ..... Not Applicable

1990 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	0	1	1
Gas	21	384	405
Dry	15	32	47
Service	- -	0	0
Total	36	417	453

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	0.0	2.8	2.8
Gas	124.9	1,770.5	1,895.4
Dry	84.9	165.0	249.9
Service	- -	0.0	0.0
Total	209.8	1,938.3	2,148.1

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled	11
New-field wildcat footage (thous. ft.)	63.9

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	29th	10th
Production	24th	12th
Reserves (1989)	23rd	13th

Seismic crew months worked (1989)	0
Average rotary rigs active	15

Number of producing wells: (12/31/90)	
Crude oil	22,338
Flowing	0
Artificial lift	22,338
Natural gas	30,000
Total	52,338

Average production:	thous. bbls.	thous. b/d
Crude oil	2,643	7
NGL	N/A	N/A
Total	2,643	7

Natural gas marketed production (MMcf)	186,740E

Average output per producing well:	
Crude oil (bbls.)	118
Natural gas (Mcf)	6,224

Average number of employees in:	
Oil and natural gas extraction	3,500
Refining	10,000
Transportation	8,800
Wholesale	8,100
Retail	28,200
Total petroleum industry	58,600

1989 Latest Available Data

Petroleum reserve position as of 12/31/89:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	1	N/A	1
Production	2	N/A	2
Net annual change	-1	N/A	-1
Proved reserves	26	N/A	26

Natural gas reserve position as of 12/31/89:

(Bcf)	Wet Gas	Dry Gas
New reserves	-293	-294
Production	137	136
Net annual change	-430	-430
Proved reserves	1,625	1,642

Cost of drilling and equipping wells:

(Appalachia)	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	79,278	90,914	24.13
Gas	307,568	153,248	34.88
Dry	16,294	107,905	27.02
Total	403,138	133,049	31.73

Number of producing stripper wells	22,338
Number of stripper well abandonments	1,138

Stripper well crude oil production:	
(bbls.)	2,601,982
(b/d)	7,129
Percentage of oil produced by stripper wells	96%

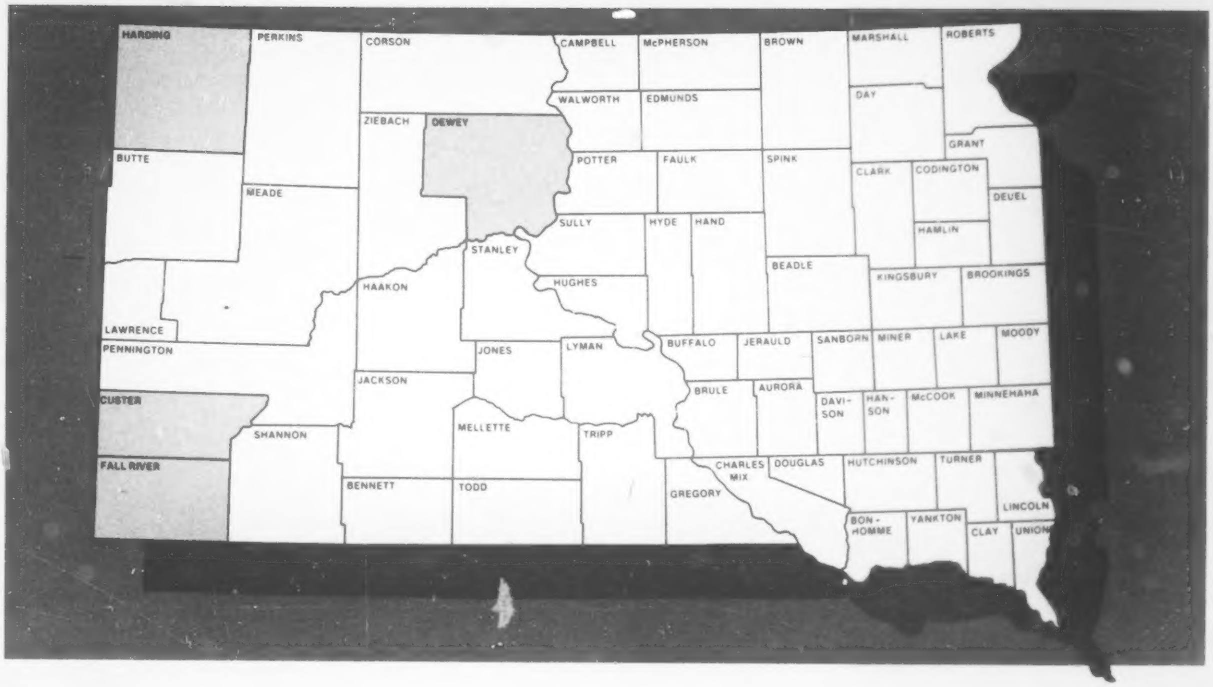
Stripper oil reserves as of 12/31/89: (thous. bbls.)	
Primary	27,012
Secondary	14,551
Total	41,563

Percentage of total value of principal mineral production:	
Crude oil — ranked 7th	1%
Natural gas — ranked 3rd	13%

State Energy Contact

Pennsylvania Dept. of Environmental Resources
Oil and Gas Division
P.O. Box 2063
Harrisburg, PA 17120
(717) 787-2814

SOUTH DAKOTA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UNION

▢ Counties with oil and/or gas production

Background Information

Number of counties	66
With oil and/or gas production	4

First year of production:

Crude oil	1954
Natural gas	1979

Year and amount of peak production:

Crude oil — 1,657 thous. bbls.	1988
Natural gas — 4,468 MMcf (est.)	1989

Deepest producing well: (ft.)

Crude oil	9,150
Natural gas	3,550

Year and depth of deepest well drilled: (ft.)

1976	9,771

Cumulative number of total wells drilled as of 12/31/90: (excluding service wells)

Oil wells	235	20%
Gas wells	66	6%
Dry holes	855	74%
Total	1,156	100%

Cumulative crude oil wellhead value as of 12/31/90: (thous. $) $421,977

Cumulative production & new reserves as of 12/31/89: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	N/A	N/A	N/A	N/A
Production	N/A	N/A	N/A	N/A

Value of Oil and Gas

Average 1990 wellhead price:

Crude oil ($/bbl.)	$22.32
Natural gas ($/Mcf)	$1.50

Wellhead value of 1990 production: (thous. $)

Crude oil	$36,783
Natural gas	$6,317
Total	$43,100

Average 1990 natural gas price to: ($/Mcf)

Residential consumers	$5.13
Commercial consumers	$4.19
Industrial consumers	$3.28
Electric utilities	N/A
All consumers	$4.55

Severance taxes paid in 1990 (thous. $) $1,355

1990 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	1	4	5
Gas	1	0	1
Dry	7	0	7
Service	- -	1	1
Total	9	5	14

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	3.3	34.4	37.7
Gas	3.9	0.0	3.9
Dry	32.4	0.0	32.4
Service	- -	2.6	2.6
Total	39.6	37.0	76.6

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled	9
New-field wildcat footage (thous. ft.)	39.6

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	26th	24th
Production	26th	24th
Reserves (1989)	N/A	N/A

Seismic crew months worked (1989)	0
Average rotary rigs active	0

Number of producing wells: (12/31/90)

Crude oil	149
Flowing	0
Artificial lift	149
Natural gas	52
Total	201

Average production:	thous. bbls.	thous. b/d
Crude oil	1,648	5
NGL (est.)	0	0
Total	1,648	5

Natural gas marketed production (MMcf)	4,211E
Average output per producing well:	
Crude oil (bbls.)	11,060
Natural gas (Mcf)	80,981

Average number of employees in:

Oil and natural gas extraction	108
Refining	0
Transportation	176
Wholesale	1,564
Retail	2,924
Total petroleum industry	4,772

1989 Latest Available Data

Petroleum reserve position as of 12/31/89:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	N/A	N/A	N/A
Production	N/A	N/A	N/A
Net annual change	N/A	N/A	N/A
Proved reserves	N/A	N/A	N/A

Natural gas reserve position as of 12/31/89:

(Bcf)	Wet Gas	Dry Gas
New reserves	N/A	N/A
Production	N/A	N/A
Net annual change	N/A	N/A
Proved reserves	N/A	N/A

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	N/A	- - -	- - -
Gas	N/A	- - -	- - -
Dry	N/A	- - -	- - -
Total	N/A	- - -	- - -

Number of producing stripper wells	24
Number of stripper well abandonments	1

Stripper well crude oil production:

(bbls.)	55,241
(b/d)	151
Percentage of oil produced by stripper wells	3%

Stripper oil reserves as of 12/31/89: (thous. bbls.)

Primary	212
Secondary	195
Total	407

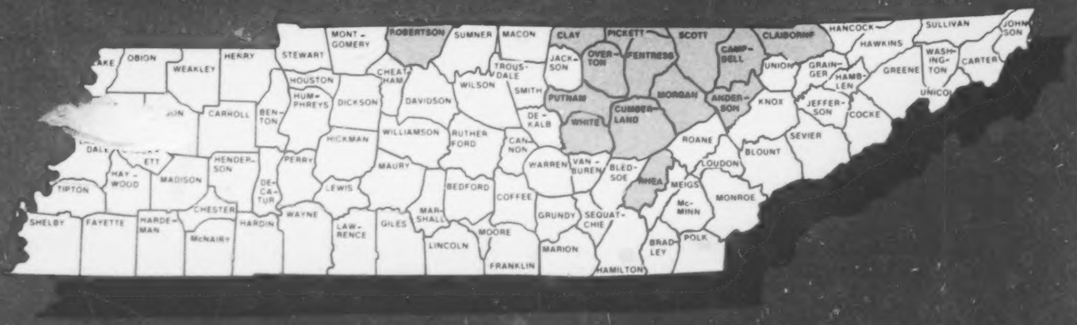
Percentage of total value of principal mineral production:

Crude oil — ranked 3rd	9%
Natural gas — ranked 7th	2%

State Energy Contact

South Dakota Geological Survey
University of South Dakota Science Center
Vermillon, SD 57069
(605) 677-5227

TENNESSEE



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▨ Counties with oil and/or gas production

Background Information

Number of counties	95
With oil and/or gas production	14

First year of production:

Crude oil	1860
Natural gas	1889

Year and amount of peak production:

Crude oil — 1,132 thous. bbls.	1982
Natural gas — 5,022 MMcf	1984

Deepest producing well: (ft.)

Crude oil	10,141
Natural gas	4,624

Year and depth of deepest well drilled: (ft.)

1982	11,540

Cumulative number of total wells drilled as of 12/31/90: (excluding service wells)

Oil wells	1,722	27%
Gas wells	1,673	27%
Dry holes	2,892	46%
Total	6,287	100%

Cumulative crude oil wellhead value as of 12/31/90: (thous. $) $291,102

Cumulative production & new reserves as of 12/31/89: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	N/A	N/A	N/A	N/A
Production	N/A	N/A	N/A	N/A

Value of Oil and Gas

Average 1990 wellhead price:

Crude oil ($/bbl.)	$19.72E
Natural gas ($/Mcf)	$1.65

Wellhead value of 1990 production: (thous. $)

Crude oil	$10,018
Natural gas	$2,978
Total	$12,996

Average 1990 natural gas price to: ($/Mcf)

Residential consumers	$5.10
Commercial consumers	$4.82
Industrial consumers	$3.30
Electric utilities	N/A
All consumers	$4.26

Severance taxes paid in 1990 (thous. $) $404

1990 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	0	13	13
Gas	1	15	16
Dry	3	3	6
Service	- -	0	0
Total	4	31	35

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	0.0	25.8	25.8
Gas	2.3	29.3	31.6
Dry	14.8	4.2	19.0
Service	- -	0.0	0.0
Total	17.1	59.3	76.4

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled	3
New-field wildcat footage (thous. ft.)	14.2

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	24th	20th
Production	27th	26th
Reserves (1989)	N/A	N/A

Seismic crew months worked (1989)	0
Average rotary rigs active	0

Number of producing wells: (12/31/90)

Crude oil	736
Flowing	0
Artificial lift	736
Natural gas	527
Total	1,263

Average production:	thous. bbls.	thous. b/d
Crude oil	508	1
NGL (est.)	N/A	N/A
Total	508	1

Natural gas marketed production (MMcf)	1,805E

Average output per producing well:

Crude oil (bbls.)	690
Natural gas (Mcf)	3,425

Average number of employees in:

Oil and natural gas extraction	228
Refining	465
Transportation	1,928
Wholesale	5,915
Retail	12,978
Total petroleum industry	21,514

1989 Latest Available Data

Petroleum reserve position as of 12/31/89:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	N/A	N/A	N/A
Production	N/A	N/A	N/A
Net annual change	N/A	N/A	N/A
Proved reserves	N/A	N/A	N/A

Natural gas reserve position as of 12/31/89:

(Bcf)	Wet Gas	Dry Gas
New reserves	N/A	N/A
Production	N/A	N/A
Net annual change	N/A	N/A
Proved reserves	N/A	N/A

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	N/A	- - -	- - -
Gas	N/A	- - -	- - -
Dry	N/A	- - -	- - -
Total	N/A	- - -	- - -

Number of producing stripper wells	839
Number of stripper well abandonments	95

Stripper well crude oil production:

(bbls.)	457,139
(b/d)	1,252
Percentage of oil produced by stripper wells	86%

Stripper oil reserves as of 12/31/89: (thous. bbls.)

Primary	428
Secondary	167
Total	595

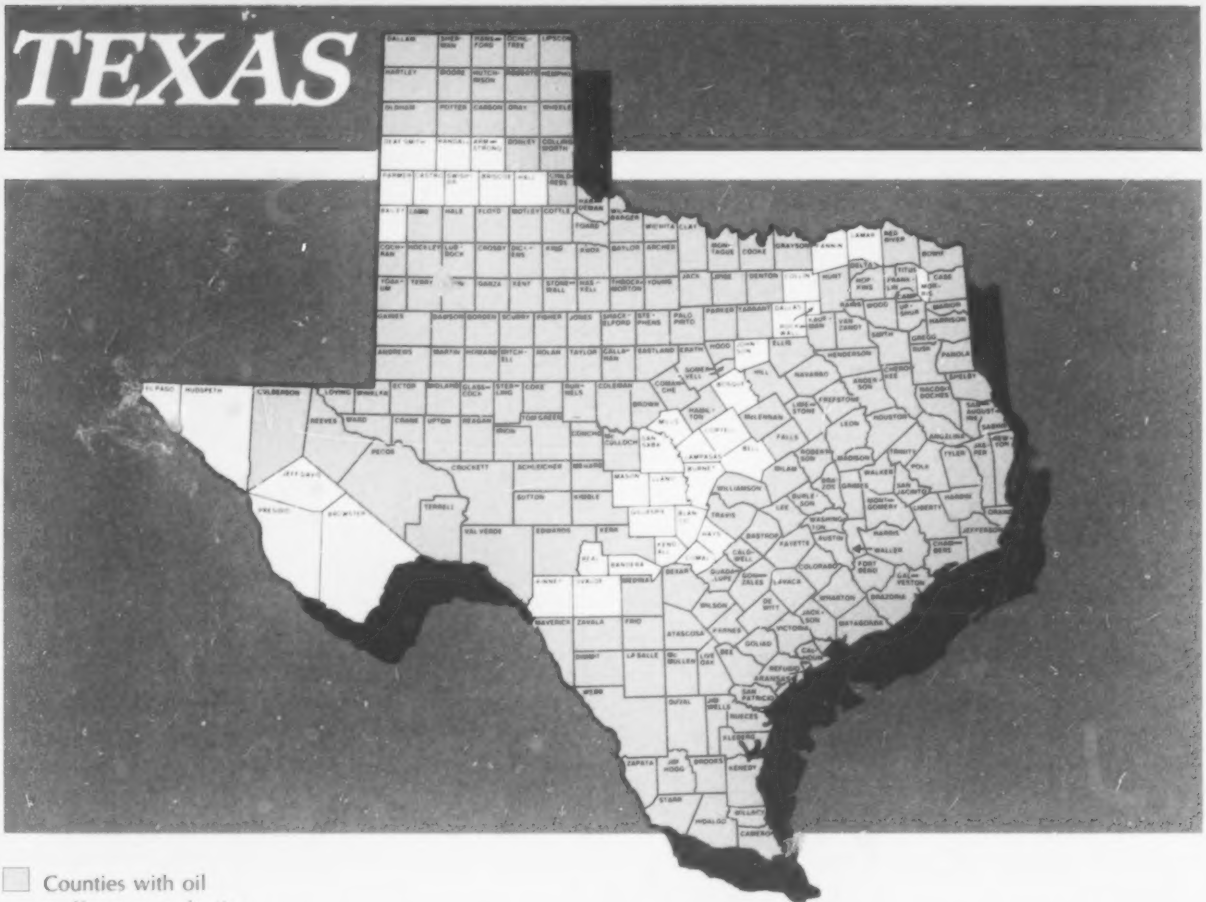
Percentage of total value of principal mineral production:

Crude oil — ranked 6th	1%
Natural gas — ranked 7th	Less than 1%

State Energy Contact

Tennessee Department of Conservation
Oil and Gas Division
701 Broadway Street
Nashville, TN 37203
(615) 742-6694

TEXAS



▨ Counties with oil and/or gas production

Background Information

Number of counties	254
With oil and/or gas production	215

First year of production:

Crude oil	1889
Natural gas	1889

Year and amount of peak production:

Crude oil — 1,301,685 thous. bbls	1972
Natural gas — 8,657,840 MMcf	1972

Deepest producing well: (ft.)

Crude oil	28,500
Natural gas	26,536

Year and depth of deepest well drilled: (ft.)

1982	29,670

Cumulative number of total wells drilled as of 12/31/90: (excluding service wells)

Oil wells	512,014	58%
Gas wells	81,608	9%
Dry holes	286,485	33%
Total	880,107	100%

Cumulative crude oil wellhead value as of 12/31/90: (thous. $) $389,820,735

Cumulative production & new reserves as of 12/31/89: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	67,361	14,955	83,316	334,317
Production	60,326	12,315	72,641	286,264

Value of Oil and Gas

Average 1990 wellhead price:

Crude oil ($/bbl.)	$22.36
Natural gas ($/Mcf)	$1.57

Wellhead value of 1990 production: (thous. $)

Crude oil	$15,774,086
Natural gas	$9,972,282
Total	$25,746,368

Average 1990 natural gas price to: ($/Mcf)

Residential consumers	$5.79
Commercial consumers	$4.28
Industrial consumers	$2.21
Electric utilities	$2.17
All consumers	$2.75

Severance taxes paid in 1990 (thous. $) .....$ 1,084,227

1990 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	143	3,951	4,094
Gas	207	1,599	1,806
Dry	1,127	1,386	2,513
Service	- -	247	247
Total	1,477	7,183	8,660

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	966.3	21,888.0	22,854.3
Gas	1,726.1	12,236.0	13,962.1
Dry	7,085.1	6,617.1	13,702.2
Service	- -	1,092.7	1,092.7
Total	9,777.5	41,833.8	51,611.3

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled	529
New-field wildcat footage (thous. ft.)	3,894.9

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	1st	1st
Production	1st	1st
Reserves (1989)	1st	1st

Seismic crew months worked (1989)	206
Average rotary rigs active	349

Number of producing wells: (12/31/90)

Crude oil	188,829
Flowing	11,742
Artificial lift	177,087
Natural gas	48,075
Total	236,904

Average production:	thous. bbls.	thous. b/d
Crude oil	705,460	1,933
NGL (est.)	231,180	633
Total	936,640	2,566

Natural gas marketed production (MMcf)	6,351,772

Average output per producing well:

Crude oil (bbls.)	3,736
Natural gas (Mcf)	132,122

Average number of employees in:

Oil and natural gas extraction	171,709
Refining	27,417
Transportation	32,445
Wholesale	23,027
Retail	32,530
Total petroleum industry	287,128

1989 Latest Available Data

Petroleum reserve position as of 12/31/89:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	583	232	815
Production	669	297	966
Net annual change	-86	-65	-151
Proved reserves	7,035	2,641	9,676

Natural gas reserve position as of 12/31/89:

(Bcf)	Wet Gas	Dry Gas
New reserves	6,101	5,820
Production	6,230	5,879
Net annual change	-129	-59
Proved reserves	48,542	45,349

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	823,432	227,279	45.92
Gas	1,407,408	753,027	99.24
Dry	695,643	268,174	50.48
Total	2,926,483	361,920	63.76

Number of producing stripper wells	119,693
Number of stripper well abandonments	5,422

Stripper well crude oil production:

(bbls.)	129,894,482
(b/d)	355,875
Percentage of oil produced by stripper wells	18%

Stripper oil reserves as of 12/31/89: (thous. bbls.)

Primary	870,617
Secondary	924,470
Total	1,795,087

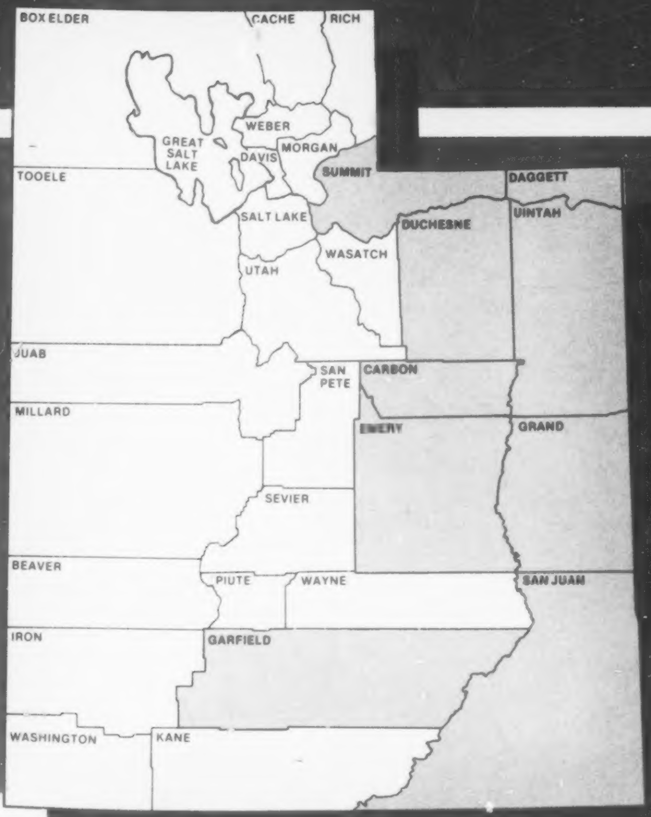
Percentage of total value of principal mineral production:

Crude oil — ranked 1st	52%
Natural gas — ranked 2nd	39%

State Energy Contact

Texas Railroad Commission
Office of Information Services
P.O. Drawer 12967
Austin, TX 78711
(512) 463-6710

UTAH



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▨ Counties with oil and/or gas production

Background Information

Number of counties	29
With oil and/or gas production	9

First year of production:

Crude oil	1907
Natural gas	1886

Year and amount of peak production:

Crude oil — 42,301 thous. bbls.	1975
Natural gas — 94,255 MMcf	1982

Deepest producing well: (ft.)

Crude oil	17,732
Natural gas	19,500

Year and depth of deepest well drilled: (ft.)

1982	21,874

Cumulative number of total wells drilled as of 12/31/90: (excluding service wells)

Oil wells	3,574	41%
Gas wells	1,415	16%
Dry holes	3,764	43%
Total	8,753	100%

Cumulative crude oil wellhead value as of 12/31/90: (thous. $) $11,128,099

Cumulative production & new reserves as of 12/31/89: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	1,147	520	1,667	4,081
Production	891	134	1,025	2,140

Value of Oil and Gas

Average 1990 wellhead price:

Crude oil ($/bbl.)	$22.61
Natural gas ($/Mcf)	$1.70

Wellhead value of 1990 production: (thous. $)

Crude oil	$624,126
Natural gas	$247,988
Total	$872,114

Average 1990 natural gas price to: ($/Mcf)

Residential consumers	$5.28
Commercial consumers	$4.30
Industrial consumers	$3.66
Electric utilities	$5.04
All consumers	$4.86

Severance taxes paid in 1990 (thous. $) $26,222

1990 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	7	43	50
Gas	1	15	16
Dry	14	13	27
Service	- -	0	0
Total	22	71	93

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	51.9	350.9	402.8
Gas	8.6	93.5	102.1
Dry	112.0	74.2	186.2
Service	- -	0.0	0.0
Total	172.5	518.6	691.1

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled	15
New-field wildcat footage (thous. ft.)	104.1

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	16th	19th
Production	11th	15th
Reserves (1989)	10th	11th

Seismic crew months worked (1989)	14
Average rotary rigs active	5

Number of producing wells: (12/31/90)

Crude oil	1,972
Flowing	99
Artificial lift	1,873
Natural gas	742
Total	2,714

Average production:	thous. bbls.	thous. b/d
Crude oil	27,604	76
NGL (est.)	8,760	24
Total	36,364	100

Natural gas marketed production (MMcf)	145,875

Average output per producing well:

Crude oil (bbls.)	13,998
Natural gas (Mcf)	196,597

Average number of employees in:

Oil and natural gas extraction	2,139
Refining	900
Transportation	2,309
Wholesale	1,059
Retail	6,014
Total petroleum industry	12,421

1989 Latest Available Data

Petroleum reserve position as of 12/31/89:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	4	-28	-24
Production	18	8	26
Net annual change	-14	-36	-50
Proved reserves	246	126	252

Natural gas reserve position as of 12/31/89:

(Bcf)	Wet Gas	Dry Gas
New reserves	39	273
Production	83	64
Net annual change	-44	209
Proved reserves	1,940	1,507

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well($)	Cost/ ft. ($)
Oil	21,971	535,869	85.51
Gas	4,196	262,268	59.77
Dry	15,798	658,265	112.95
Total	41,965	518,090	89.85

Number of producing stripper wells	897
Number of stripper well abandonments	73

Stripper well crude oil production:

(bbls.)	926,662
(b/d)	2,539
Percentage of oil produced by stripper wells	3%

Stripper oil reserves as of 12/31/89: (thous. bbls.)

Primary	12,245
Secondary	11,765
Total	24,010

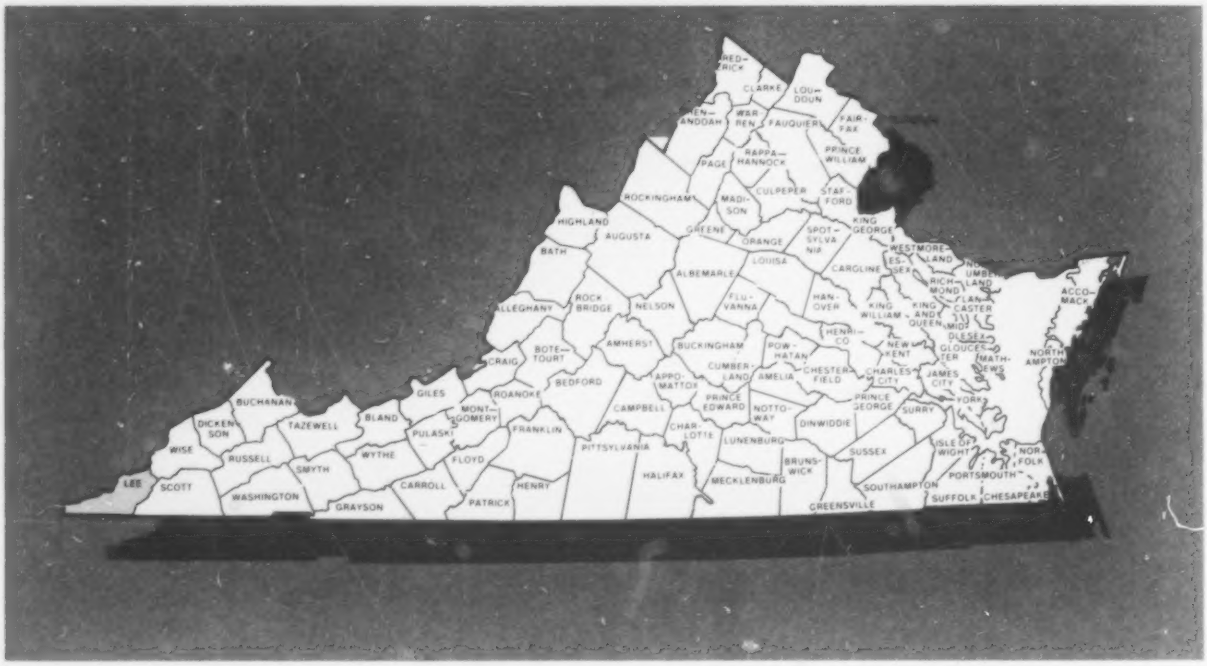
Percentage of total value of principal mineral production:

Crude oil — ranked 1st	22%
Natural gas — ranked 4th	8%

State Energy Contact

Department of Natural Resources
Division of Oil, Gas and Mining
3 Triad Center, Suite 350
Salt Lake City, UT 84180
(801) 538-5340

VIRGINIA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WISE
RUSSELL
WYTHE
PITTSYLVANIA
LUNENBURG
ISLE OF WIGHT
NORFOLK
SUSSEX
FLOYD
SMYTH
BRUNSWICK
HALIFAX
PORTSMOUTH
LEE
SCOTT
CARROLL
HENRY
MECKLENBURG
SOUTHAMPTON
WASHINGTON
PATRICK
GRAYSON
SUFFOLK
CHESAPEAKE
GREENSVILLE

▨ Counties with oil and/or gas production

Background Information

Number of counties	96
With oil and/or gas production	12

First year of production:

Crude oil	1943
Natural gas	1931

Year and amount of peak production:

Crude oil — 65 thous. bbls.	1983
Natural gas —19,223 MMcf	1987

Deepest producing well: (ft.)

Crude oil	5,175
Natural gas	7,238

Year and depth of deepest well drilled: (ft.)

1977	17,003

Cumulative number of total wells drilled as of 12/31/90:
(excluding service wells)

Oil wells	66	7%
Gas wells	697	76%
Dry holes	150	17%
Total	913	100%

Cumulative crude oil wellhead value as of 12/31/90:
(thous. $) $8,972

Cumulative production & new reserves as of 12/31/89:
(latest available data)

	Crude oil	NGL	Total	Natural gas (Bcf)
	(mill. bbls.)			
Reserves	N/A	N/A	N/A	N/A
Production	N/A	N/A	N/A	N/A

Value of Oil and Gas

Average 1990 wellhead price:

Crude oil ($/bbl.)	$22.00E
Natural gas ($/Mcf)	$2.25

Wellhead value of 1990 production: (thous. $)

Crude oil	$330
Natural gas	$39,256
Total	$39,586

Average 1990 natural gas price to: ($/Mcf)

Residential consumers	$6.79
Commercial consumers	$4.84
Industrial consumers	$3.75
Electric utilities	$2.69
All consumers	$5.58

Severance taxes paid in 1990 .... Not Applicable

1990 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	0	0	0
Gas	0	6	6
Dry	0	0	0
Service	- -	0	0
Total	0	6	6

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	0.0	0.0	0.0
Gas	0.0	29.4	29.4
Dry	0.0	0.0	0.0
Service	- -	0.0	0.0
Total	0.0	29.4	29.4

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled	0
New-field wildcat footage (thous. ft.)	0.0

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	- -	22nd
Production	31st	22nd
Reserves (1989)	N/A	22nd

Seismic crew months worked (1989)	0
Average rotary rigs active	2

Number of producing wells: (12/31/90)

Crude oil	25
Flowing	0
Artificial lift	25
Natural gas	819
Total	844

Average production:	thous. bbls.	thous. b/d
Crude oil	15	- -
NGL (est.)	N/A	- -
Total	15	- -

Natural gas marketed production (MMcf)	17,447E

Average output per producing well:

Crude oil (bbls.)	600
Natural gas (Mcf)	21,303

Average number of employees in:

Oil and natural gas extraction	254
Refining	272
Transportation	2,938
Wholesale	8,770
Retail	16,783
Total petroleum industry	29,017

1989 Latest Available Data

Petroleum reserve position as of 12/31/89:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	N/A	N/A	N/A
Production	N/A	N/A	N/A
Net annual change	N/A	N/A	N/A
Proved reserves	N/A	N/A	N/A

Natural gas reserve position as of 12/31/89:

(Bcf)	Wet Gas	Dry Gas
New reserves	5	5
Production	18	18
Net annual change	-13	-13
Proved reserves	217	217

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	N/A	- -	- -
Gas	N/A	- -	- -
Dry	N/A	- -	- -
Total	N/A	- -	- -

Number of producing stripper wells	44
Number of stripper well abandonments	5

Stripper well crude oil production:

(bbls.)	21,271
(b/d)	58
Percentage of oil produced by stripper wells	100%

Stripper oil reserves as of 12/31/89: (thous. bbls.)

Primary	69
Secondary	9
Total	78

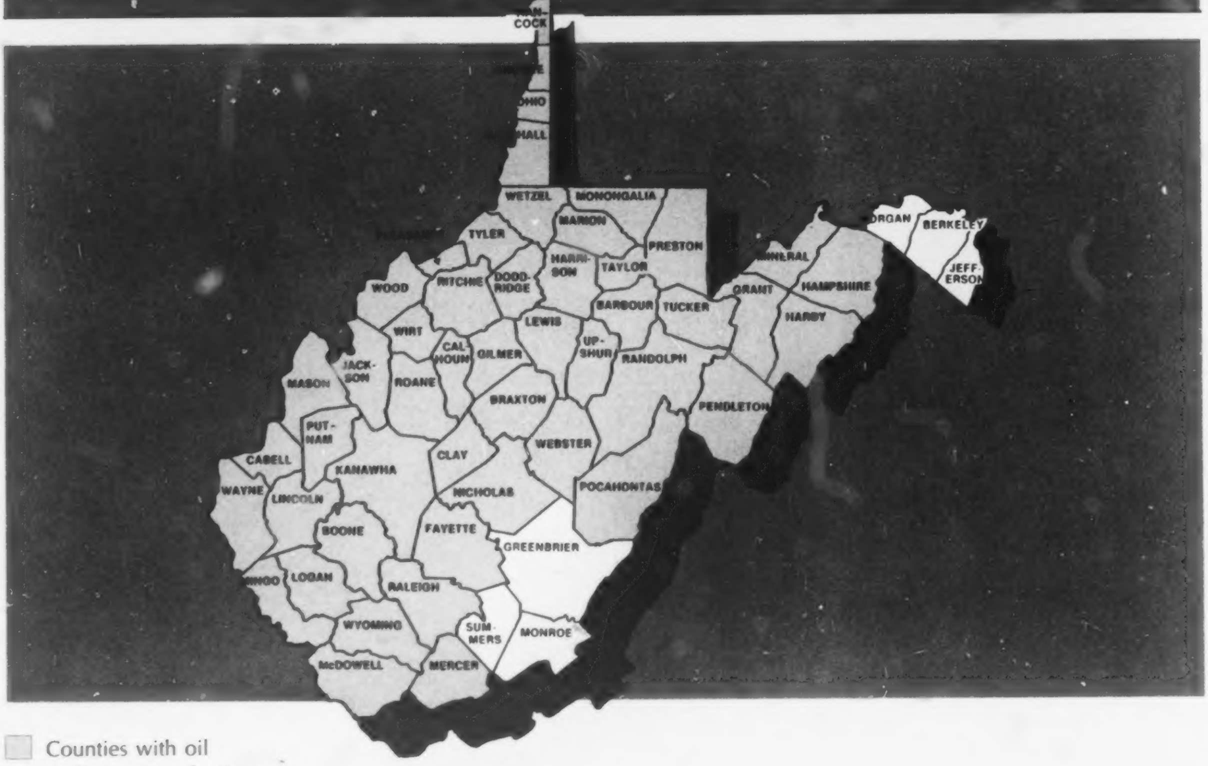
Percentage of total value of principal mineral production:

Crude oil — ranked 8th	Less than 1%
Natural gas — ranked 5th	2%

State Energy Contact

Virginia Energy Department
Office of Oil and Gas
P.O. Box 1197
Richmond, VA 23209
(804) 786-3611

WEST VIRGINIA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GREENBRIER
INGO
LOGAN
RALEIGH
WYOMING
SUMMERS
MONROE
McDOWELL
MERCER

▨ Counties with oil and/or gas production

Background Information

Number of counties	55
With oil and/or gas production	49

First year of production:

Crude oil	1860
Natural gas	1885

Year and amount of peak production:

Crude oil — 16,196 thous. bbls.	1900
Natural gas — 242,452 MMcf	1970

Deepest producing well: (ft.)

Crude oil	6,785
Natural gas	14,300

Year and depth of deepest well drilled: (ft.)

1974	20,222

Cumulative number of total wells drilled as of 12/31/90: (excluding service wells)

Oil wells	47,962	41%
Gas wells	48,622	42%
Dry holes	19,606	17%
Total	116,190	100%

Cumulative crude oil wellhead value as of 12/31/90: (thous. $)	$2,216,064

Cumulative production & new reserves as of 12/31/89: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	586	393	979	19,136
Production	556	293	849	16,794

Value of Oil and Gas

Average 1990 wellhead price:

Crude oil ($/bbl.)	$22.16
Natural gas ($/Mcf)	$3.10

Wellhead value of 1990 production: (thous. $)

Crude oil	$47,489
Natural gas	$602,330
Total	$649,819

Average 1990 natural gas price to: ($/Mcf)

Residential consumers	$6.42
Commercial consumers	$6.08
Industrial consumers	$3.34
Electric utilities	$5.13
All consumers	$6.11

Severance taxes paid in 1990 (thous. $)	$23,206

1990 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	0	21	21
Gas	0	677	677
Dry	1	2	3
Service	- -	0	0
Total	1	700	701

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	0.0	69.7	69.7
Gas	0.0	3,176.9	3,176.9
Dry	2.5	6.6	9.1
Service	- -	0.0	0.0
Total	2.5	3,253.2	3,255.7

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled	1
New-field wildcat footage (thous. ft.)	2.5

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	23rd	6th
Production	25th	10th
Reserves (1989)	22nd	10th

Seismic crew months worked (1989)	0
Average rotary rigs active	16

Number of producing wells: (12/31/90)	
Crude oil	15,950
Flowing	0
Artificial lift	15,950
Natural gas	37,000
Total	52,950

Average production:	thous. bbls.	thous. b/d
Crude oil	2,143	6
NGL (est.)	5,449	15
Total	7,592	21

Natural gas marketed production (MMcf)	194,300
Average output per producing well:	
Crude oil (bbls.)	134
Natural gas (Mcf)	5,251

Average number of employees in:	
Oil and natural gas extraction	4,591
Refining	483
Transportation	5,019
Wholesale	1,179
Retail	5,311
Total petroleum industry	16,583

1989 Latest Available Data

Petroleum reserve position as of 12/31/89:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	-1	15	14
Production	2	7	9
Net annual change	-3	8	5
Proved reserves	30	100	130

Natural gas reserve position as of 12/31/89:

(Bcf)	Wet Gas	Dry Gas
New reserves	72	55
Production	170	160
Net annual change	-98	-105
Proved reserves	2,342	2,201

Cost of drilling and equipping wells:

(Appalachia)	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	79,278	90,914	24.13
Gas	307,568	153,248	34.88
Dry	16,294	107,905	27.02
Total	403,138	133,049	31.73

Number of producing stripper wells	15,970
Number of stripper well abandonments	34

Stripper well crude oil production:	
(bbls.)	2,223,540
(b/d)	6,092
Percentage of oil produced by stripper wells	99%

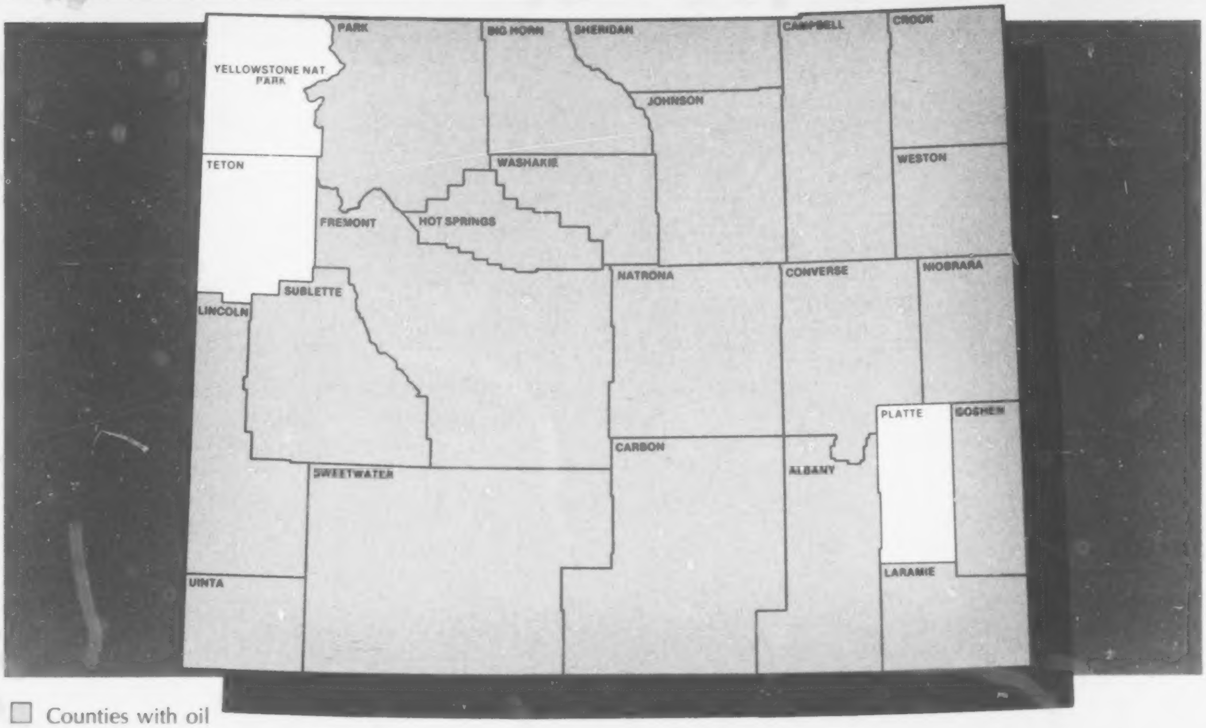
Stripper oil reserves as of 12/31/89: (thous. bbls.)	
Primary	18,183
Secondary	12,122
Total	30,305

Percentage of total value of principal mineral production:	
Crude oil — ranked 5th	1%
Natural gas — ranked 2nd	12%

State Energy Contact

West Virginia Department of Mines
Oil and Gas Division
1615 Washington Street, East
Charleston, WV 25311
(304) 348-3500

WYOMING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ALBANY
SWEETWATER
LARAMIE
UINTA

☐ Counties with oil and/or gas production

Background Information

Number of counties	23
With oil and/or gas production	20

First year of production:

Crude oil	1894
Natural gas	1889

Year and amount of peak production:

Crude oil — 160,345 thous. bbls.	1970
Natural gas — 516,683 MMcf	1984

Deepest producing well: (ft.)

Crude oil	19,612
Natural gas	24,818

Year and depth of deepest well drilled: (ft.)

1979	25,764

Cumulative number of total wells drilled as of 12/31/90: (excluding service wells)

Oil wells	26,999	50%
Gas wells	4,109	8%
Dry holes	22,240	42%
Total	53,348	100%

Cumulative crude oil wellhead value as of 12/31/90: (thous. $)	$45,600,843

Cumulative production & new reserves as of 12/31/89: (latest available data)

	Crude oil	NGL	Total	Natural gas (Bcf)
		(mill. bbls.)		
Reserves	6,371	1,041	7,412	25,362
Production	5,558	576	6,134	13,907

Value of Oil and Gas

Average 1990 wellhead price:

Crude oil ($/bbl.)	$21.05
Natural gas ($/Mcf)	$1.09

Wellhead value of 1990 production: (thous. $)

Crude oil	$2,186,148
Natural gas	$754,583
Total	$2,940,731

Average 1990 natural gas price to: ($/Mcf)

Residential consumers	$4.84
Commercial consumers	$4.45
Industrial consumers	$3.13
Electric utilities	$3.26
All consumers	$4.53

Severance taxes paid in 1990 (thous. $)	$265,473

1990 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	26	227	253
Gas	40	179	219
Dry	193	81	274
Service	- -	103	103
Total	259	590	849

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	249.1	1,229.6	1,478.7
Gas	183.9	1,447.2	1,631.1
Dry	1,425.6	562.1	1,987.7
Service	- -	114.3	114.3
Total	1,858.7	3,352.2	5,211.8

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled	194
New-field wildcat footage (thous. ft.)	1,483.9

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	9th	13th
Production	6th	5th
Reserves (1989)	5th	5th

Seismic crew months worked (1989)	104
Average rotary rigs active	37

Number of producing wells: (12/31/90)

Crude oil	11,397
Flowing	850
Artificial lift	10,547
Natural gas	2,431
Total	13,828

Average production:	thous. bbls.	thous. b/d
Crude oil	103,855	285
NGL (est.)	36,500	100
Total	140,355	385

Natural gas marketed production (MMcf)	692,278

Average output per producing well:

Crude oil (bbls.)	9,112
Natural gas (Mcf)	284,771

Average number of employees in:

Oil and natural gas extraction	8,941
Refining	1,017
Transportation	1,203
Wholesale	731
Retail	3,537
Total petroleum industry	15,429

1989 Latest Available Data

Petroleum reserve position as of 12/31/89:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	100	-172	-72
Production	90	50	140
Net annual change	10	-222	-212
Proved reserves	825	770	1,595

Natural gas reserve position as of 12/31/89:

(Bcf)	Wet Gas	Dry Gas
New reserves	993	1,027
Production	620	591
Net annual change	373	436
Proved reserves	11,276	10,744

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	69,205	416,900	71.61
Gas	138,106	842,112	104.81
Dry	64,217	277,996	35.42
Total	271,529	484,009	66.28

Number of producing stripper wells	2,982
Number of stripper well abandonments	263

Stripper well crude oil production:

(bbls.)	5,388,407
(b/d)	14,763
Percentage of oil produced by stripper wells	5%

Stripper oil reserves as of 12/31/89: (thous. bbls.)

Primary	85,992
Secondary	59,758
Total	145,750

Percentage of total value of principal mineral production:

Crude oil — ranked 1st	37%
Natural gas — ranked 3rd	17%

State Energy Contact

Wyoming Oil and Gas Conservation Commission
777 West First Street
P.O. Box 2640
Casper, WY 82602
(307) 234-7147

Exploration

Seismic Exploration Activity

(crew months)	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Alabama	126	156	116	105	157	78	16	18	23	4
Alaska	37	82	129	58	79	48	16	5	22	21
Arizona	35	33	9	4	7	4	5	1	0	5
Arkansas	37	67	117	117	40	57	12	1	7	16
California	157	192	221	186	152	149	125	113	86	73
Colorado	87	56	141	176	208	131	84	109	58	88
Florida	21	42	20	37	10	18	6	8	22	3
Illinois	5	9	16	11	13	11	1	0	2	2
Indiana	6	0	1	3	13	3	0	1	5	0
Kansas	76	65	98	75	114	69	35	19	43	312
Kentucky	23	12	4	24	3	3	1	0	1	1
Louisiana	654	501	563	423	436	280	157	91	79	68
Maryland	4	6	2	2	1	0	1	0	5	0
Michigan	145	239	159	160	144	241	259	296	237	85
Mississippi	168	175	180	124	85	78	38	14	41	3
Montana	202	388	224	156	125	43	47	28	19	7
Nebraska	13	17	20	14	16	8	7	10	5	51
Nevada	47	41	61	39	54	60	16	6	22	8
New Mexico	120	136	156	116	114	63	71	46	68	38
New York	11	7	7	7	12	9	7	0	0	0
North Dakota	242	268	252	114	74	79	42	37	35	4
Ohio	3	8	3	15	12	9	2	12	0	2
Oklahoma	169	301	256	316	231	202	130	80	152	79
Oregon	9	27	27	13	33	19	8	10	8	2
Pennsylvania	39	49	37	27	3	17	13	0	3	0
South Dakota	2	3	9	14	4	0	7	†	0	0
Tennessee	30	34	24	17	19	4	0	2	1	0
Texas	1,438	1,745	1,583	1,353	1,199	932	481	316	388	206
Utah	158	122	127	111	121	29	10	21	12	14
Virginia	24	31	18	9	3	6	7	0	3	0
West Virginia	24	23	9	17	17	4	2	0	2	
Wyoming	274	317	253	323	306	163	114	64	98	104
Other	227	269	258	208	297	80	46	32	11	0
Total Land	**4,613**	**5,421**	**5,100**	**4,374**	**4,102**	**2,897**	**1,766**	**1,337**	**1,462**	**1,194**
Total Marine	**348**	**456**	**578**	**569**	**577**	**597**	**258**	**224**	**230**	**198**
TOTAL U.S.	**4,962**	**5,877**	**5,676**	**4,943**	**4,679**	**3,494**	**2,024**	**1,561**	**1,692**	**1,392**

Source: Society of Exploration Geophsysicists
† Averages less than one.

Notes: Data include government and university activity, but exclude gravity and magnetic methods. Totals may not add due to rounding.

1990 numbers are not available.

Rotary Rigs Operating

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Alabama	17	15	16	15	22	10	11	12	11	26
Alaska	23	22	14	14	20	13	8	12	11	11
Arizona	1	1	†	0	†	0	0	0	0	0
Arkansas	34	27	26	26	24	9	9	9	9	11
California	155	129	106	107	81	49	61	60	49	49
Colorado	82	60	52	54	50	24	25	29	27	30
Florida	8	5	4	4	7	2	3	2	2	2
Illinois	45	76	61	41	29	6	3	4	5	4
Indiana	1	7	6	7	4	1	1	0	0	0
Kansas	196	157	125	128	92	47	49	40	43	47
Kentucky	5	10	8	8	6	2	2	5	5	8
Louisiana	456	343	282	310	283	142	135	164	140	151
Michigan	37	31	29	34	34	24	22	20	17	13
Mississippi	72	42	33	32	31	15	13	18	17	13
Montana	81	36	24	36	23	10	9	8	5	5
Nebraska	15	9	9	9	7	3	5	3	1	2
Nevada	5	3	1	5	5	3	1	2	2	1
New Mexico	135	103	65	78	71	29	35	37	36	50
New York	12	15	10	9	5	2	2	1	1	1
North Dakota	119	69	42	51	39	13	14	15	15	20
Ohio	98	57	40	51	29	18	20	14	13	12
Oklahoma	698	622	285	319	252	142	136	126	122	125
Oregon	2	†	†	1	1	0	0	1	0	0
Pennsylvania	39	33	22	36	30	17	17	19	17	15
South Dakota	2	2	1	2	2	1	0	1	1	0
Texas	1,317	990	797	850	680	312	293	281	263	349
Utah	69	40	37	45	29	11	7	6	5	5
Virginia	3	3	2	3	4	5	2	2	2	2
West Virginia	45	49	34	38	26	15	13	13	16	16
Wyoming	191	143	96	115	93	36	39	37	34	37
Other	7	6	5	0	1	3	1	3	2	2
TOTAL U.S.	**3,970**	**3,105**	**2,232**	**2,428**	**1,980**	**964**	**936**	**936**	**869**	**1,010**

Source: Baker Hughes, Inc.

† Averages less than one.

Note: Data represent annual averages, and include offshore rigs.

Drilling

New-Field Wildcat Wells Drilled

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Alabama	71	79	84	121	143	76	56	85	87	93
Alaska	14	7	0	10	3	0	4	3	6	2
Arizona	8	6	11	2	1	6	4	1	1	0
Arkansas	146	120	148	124	109	68	69	46	46	43
California	132	94	93	112	96	57	82	64	50	34
Colorado	509	366	299	369	355	177	165	175	223	182
Florida	10	12	13	12	10	6	4	6	9	9
Illinois	167	251	428	324	180	129	109	124	93	71
Indiana	95	113	124	97	102	42	47	23	25	19
Kansas	480	362	345	229	254	367	671	407	391	422
Kentucky	99	177	155	136	63	143	132	86	94	27
Louisiana	800	659	553	673	556	324	297	295	208	225
Michigan	402	449	304	537	445	236	241	230	150	120
Mississippi	355	268	252	281	259	104	103	125	105	96
Missouri	28	11	17	13	9	5	5	10	5	3
Montana	400	204	142	202	193	116	75	109	40	64
Nebraska	269	191	187	176	149	58	98	67	46	57
Nevada	25	10	6	31	24	19	11	12	14	17
New Mexico	248	205	118	112	130	47	55	34	29	24
New York	25	5	10	10	6	6	5	5	2	1
North Dakota	332	246	127	180	133	71	61	76	36	70
Ohio	20	35	27	30	22	21	10	9	4	13
Oklahoma	267	263	168	164	144	130	111	115	102	104
Oregon	11	2	0	2	1	1	1	5	8	0
Pennsylvania	16	21	3	18	24	6	11	17	4	11
South Dakota	46	30	33	14	15	16	6	7	8	9
Tennessee	256	328	311	163	100	37	28	9	4	3
Texas	3,154	2,293	1,721	1,768	1,488	851	734	725	618	529
Utah	136	108	101	101	42	30	33	34	16	15
Virginia	6	13	13	3	2	6	2	4	1	0
West Virginia	39	26	10	8	6	4	9	3	1	1
Wyoming	551	386	394	507	451	293	270	269	148	194
Other	34	46	44	90	115	75	50	91	56	51
TOTAL U.S.	**9,151**	**7,386**	**6,241**	**6,619**	**5,630**	**3,527**	**3,559**	**3,271**	**2,630**	**2,509**

Source: American Petroleum Institute

Notes: Data include oil wells, gas wells, and dry holes. Federal offshore wells are included in Other.

Exploratory Wells Drilled

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Alabama	75	79	84	121	143	80	69	100	110	109
Alaska	20	10	3	13	5	2	4	5	6	5
Arizona	8	7	11	2	2	6	4	1	1	0
Arkansas	154	128	155	133	122	85	90	58	58	56
California	538	468	205	210	201	147	174	125	132	98
Colorado	849	653	510	580	563	285	259	292	322	272
Florida	10	12	13	12	10	6	4	7	9	9
Illinois	736	695	878	777	537	312	251	307	263	178
Indiana	347	451	459	409	403	153	154	113	75	47
Kansas	1,848	1,838	1,724	2,282	1,503	1,112	1,246	994	886	856
Kentucky	870	1,119	1,421	990	635	237	246	160	157	65
Louisiana	971	801	597	767	621	429	352	346	257	243
Michigan	402	449	306	537	454	260	274	254	184	134
Mississippi	357	268	252	281	260	107	115	138	132	126
Missouri	78	79	45	28	15	5	6	10	5	3
Montana	521	275	185	252	222	143	99	139	63	80
Nebraska	279	197	189	180	160	85	128	91	62	85
Nevada	28	11	8	32	25	20	13	15	16	22
New Mexico	358	314	195	225	288	157	155	111	96	79
New York	79	44	44	30	18	12	8	8	4	3
North Dakota	461	371	211	279	219	126	98	137	80	130
Ohio	151	180	114	110	84	31	43	40	22	51
Oklahoma	733	707	570	518	406	220	245	258	217	256
Oregon	20	8	0	2	3	9	6	11	8	1
Pennsylvania	342	165	92	106	60	25	30	42	34	36
South Dakota	47	33	34	16	16	17	9	9	9	9
Tennessee	333	413	335	164	117	58	34	10	8	4
Texas	5,688	5,077	4,566	5,136	4,174	2,523	2,225	1,976	1,681	1,477
Utah	208	149	133	113	54	38	48	45	25	22
Virginia	6	26	15	3	3	7	2	4	2	0
West Virginia	170	156	66	39	35	14	20	11	6	1
Wyoming	708	537	477	607	552	363	328	322	196	259
Other	35	46	46	94	116	79	51	102	78	52
TOTAL U.S.	**17,430**	**15,766**	**13,943**	**15,048**	**12,026**	**7,153**	**6,790**	**6,241**	**5,204**	**4,768**

Source: American Petroleum Institute

Notes: Data include oil wells, gas wells, and dry holes. Federal offshore wells are included in Other.

Development Wells Drilled

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Alabama	142	133	150	266	217	201	205	233	395	932
Alaska	146	200	157	191	98	187	90	132	95	103
Arizona	5	1	1	0	1	0	0	0	0	4
Arkansas	723	680	729	740	875	400	323	372	253	263
California	2,593	2,107	2,222	3,299	3,122	1,998	2,188	1,781	1,562	1,732
Colorado	1,122	1,173	993	1,224	966	472	627	740	602	840
Florida	15	9	7	12	11	8	5	3	2	1
Illinois	2,550	2,433	2,318	2,314	1,840	1,040	1,006	778	530	549
Indiana	460	571	542	529	540	274	182	147	117	90
Kansas	6,542	6,491	5,407	4,208	3,986	2,038	1,987	2,007	1,666	1,684
Kentucky	2,030	2,583	2,861	2,854	1,976	918	1,162	1,028	853	502
Louisiana	4,362	4,244	4,379	6,029	4,754	2,257	2,110	1,906	1,381	1,379
Michigan	362	435	471	574	394	265	253	383	660	844
Mississippi	431	316	298	331	312	187	201	207	160	151
Missouri	189	104	133	85	62	5	15	2	1	4
Montana	744	536	330	563	385	205	188	208	169	248
Nebraska	327	212	182	187	114	55	65	43	41	37
Nevada	2	0	1	5	9	0	2	3	7	9
New Mexico	2,099	1,733	1,306	1,404	1,434	761	628	769	808	1,196
New York	492	623	401	591	418	273	247	171	100	6
North Dakota	417	325	278	421	278	93	88	118	102	125
Ohio	5,926	4,618	4,402	4,893	3,652	1,906	1,808	1,339	1,225	1,095
Oklahoma	12,357	10,660	8,489	9,086	7,133	4,348	3,650	3,054	2,575	2,417
Oregon	0	0	0	0	2	2	4	4	6	2
Pennsylvania	3,517	3,168	2,547	3,548	2,718	1,246	1,232	997	850	417
South Dakota	43	20	18	28	31	0	6	10	7	4
Tennessee	295	214	211	237	120	125	131	75	51	31
Texas	20,291	19,707	19,262	21,982	19,225	10,265	8,678	7,570	6,460	6,936
Utah	347	313	285	381	302	159	71	86	57	71
Virginia	26	71	24	65	85	132	19	25	20	6
West Virginia	1,948	1,921	1,600	1,884	1,393	886	843	654	779	700
Wyoming	1,289	1,124	1,010	1,156	918	453	451	391	383	487
Other	12	26	46	26	31	334	39	49	52	19
TOTAL U.S.	**71,804**	**66,751**	**61,060**	**69,113**	**57,402**	**31,493**	**28,504**	**25,285**	**21,969**	**22,844**

Source: American Petroleum Institute

Notes: Data include oil wells, gas wells, and dry holes. Federal offshore wells are included in Other.

Total Wells Drilled

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Alabama	222	214	234	387	360	281	274	333	505	1,041
Alaska	172	227	164	215	104	199	97	144	118	116
Arizona	14	14	12	2	3	6	4	1	1	4
Arkansas	889	825	907	898	1,018	485	413	430	312	319
California	3,838	3,097	2,831	3,947	3,599	2,319	2,565	2,133	1,786	1,996
Colorado	1,977	1,832	1,505	1,810	1,551	1,029	890	1,033	930	1,114
Florida	25	21	20	24	21	14	9	10	11	10
Illinois	3,436	3,253	3,322	3,140	2,381	1,368	1,364	1,230	832	769
Indiana	828	1,051	1,035	1,003	972	446	354	279	197	147
Kansas	8,551	8,561	7,337	6,606	5,584	3,157	3,239	3,005	2,555	2,540
Kentucky	3,062	3,804	4,424	3,936	2,643	1,161	1,426	1,197	1,013	569
Louisiana	5,503	5,117	5,037	6,923	5,450	2,690	2,462	2,253	1,644	1,622
Michigan	787	900	791	1,131	863	542	538	640	846	981
Mississippi	788	584	550	613	572	295	317	345	292	277
Missouri	397	305	245	260	84	10	21	12	6	7
Montana	1,289	816	519	829	609	348	298	355	232	330
Nebraska	608	414	372	378	277	156	204	135	103	123
Nevada	34	13	9	37	34	20	15	21	24	36
New Mexico	2,527	2,100	1,539	1,674	1,743	936	801	889	923	1,294
New York	578	668	447	621	436	285	255	179	104	9
North Dakota	879	696	489	700	497	219	186	256	182	256
Ohio	6,082	4,814	4,542	5,036	3,743	1,946	1,851	1,382	1,248	1,146
Oklahoma	13,125	11,390	9,097	9,682	7,617	4,605	3,959	3,368	2,888	2,746
Oregon	20	8	0	2	5	11	10	18	14	3
Pennsylvania	3,962	3,399	2,688	3,727	2,806	1,271	1,263	1,039	884	453
South Dakota	90	53	52	44	49	17	15	20	16	14
Tennessee	628	627	546	401	237	183	165	85	59	35
Texas	26,442	25,439	24,526	27,917	24,291	13,269	11,279	9,978	8,480	8,660
Utah	555	482	418	495	359	199	122	133	84	93
Virginia	32	97	39	68	88	139	21	29	22	6
West Virginia	2,170	2,114	1,689	1,959	1,432	900	863	665	785	701
Wyoming	2,043	1,719	1,532	1,821	1,533	831	813	731	598	849
Other	47	75	132	126	147	143	91	151	130	71
TOTAL U.S.	**91,600**	**84,729**	**77,050**	**86,412**	**71,108**	**39,480**	**36,184**	**32,479**	**27,824**	**28,337**

Source: American Petroleum Institute

Notes: Data include oil, gas and service wells, dry holes, stratigraphic and core tests.
Federal offshore wells are included in Other.

Financial

Cost of Drilling and Equipping Wells—1989

	No. of Wells Drilled	Footage Drilled	Depth per Well	Total Cost	Cost per Well	Cost per Foot
		(ft.)			($)	
Alabama	520	1,654,337	3,181	101,363,991	194,931	61.28
Alaska	107	1,101,238	10,292	330,564,687	3,089,390	300.17
Arkansas	314	1,422,999	4,532	65,933,966	209,981	46.33
California	1,653	4,380,815	2,650	414,835,727	250,959	94.70
Colorado	889	4,887,938	5,498	205,929,163	231,641	42.13
Florida	10	146,510	14,651	10,595,253	1,059,525	72.32
Illinois	785	1,553,358	1,979	39,497,753	50,316	25.42
Indiana	175	238,842	1,365	3,958,866	22,622	16.57
Kansas	2,488	8,158,622	3,279	202,078,985	81,221	24.77
Kentucky	899	1,855,619	2,064	65,244,589	72,575	35.16
Louisiana	1,655	13,471,727	8,140	1,989,728,477	1,202,253	147.70
Michigan	831	2,442,825	2,940	210,780,287	253,647	86.27
Mississippi	287	2,468,002	8,599	182,044,803	634,302	73.76
Montana	226	710,490	3,144	33,812,012	149,611	47.59
Nebraska	105	541,353	5,156	10,744,582	102,329	19.85
New Mexico	876	4,746,623	5,419	314,272,002	358,758	66.20
North Dakota	178	1,554,798	8,735	101,219,180	568,647	65.10
Oklahoma	2,679	15,113,506	5,641	1,023,864,650	382,182	67.75
Texas	8,086	45,892,572	5,676	2,926,483,206	361,920	63.76
Utah	81	467,023	5,766	41,965,271	518,090	89.85
Wyoming	561	4,097,076	7,303	271,528,769	484,009	66.28
Appalachia	3,030	12,705,676	4,193	403,138,087	133,049	31.73
Federal Waters	117	1,339,399	11,448	656,587,045	5,611,855	490.20
Other	141	523,045	3,710	63,167,731	447,998	120.75
Total Offshore	**746**	**7,721,365**	**10,350**	**2,385,126,082**	**3,197,220**	**308.91**
Total Onshore	**25,947**	**127,753,028**	**4,770**	**7,284,213,000**	**280,734**	**58.87**
TOTAL U.S.	**26,693**	**131,474,393**	**4,925**	**9,669,339,082**	**362,243**	**73.55**
Exploratory Wells	**5,199**	**30,120,093**	**6,723**	**2,409,863,920**	**669,883**	**179.93**
Development Wells	**21,494**	**101,354,300**	**5,180**	**7,259,475,162**	**425,901**	**82.22**

Source: *Joint Association Survey on Drilling Costs*

Notes: Appalachia includes New York, Ohio, Pennsylvania and West Virginia. 1990 data are unavailable.

Crude Oil Revenues

(Thous.$)	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Alabama	740,344	646,852	563,692	582,040	556,142	293,807	345,373	287,276	342,171	409,690
Alaska	13,861,153	12,427,713	11,209,444	11,429,170	11,405,909	4,571,590	7,839,707	6,259,453	8,262,478	10,098,036
Arizona	8,568*	10,385*	7,110*	6,020*	4,725*	2,439*	2,273*	1,646*	2,525*	2,852*
Arkansas	618,279	567,732	533,050	527,250	491,145	229,412	245,183	193,901	197,121	223,840
California	10,316,874	9,870,640	9,149,996	9,101,522	9,384,637	4,839,314	5,504,159	4,247,628	5,122,958	6,246,020
Colorado	1,081,514	964,000	840,126	810,256	775,507	409,740	510,083	486,706	586,584	705,315
Florida	869,325	820,032	605,704	448,322	332,282	217,029	132,734	127,267	85,646	103,551
Illinois	867,963	878,130	850,304	830,244	814,129	400,502	420,369	332,420	374,177	466,125
Indiana	170,286	176,125	154,628	158,707	138,606	69,243	65,378	54,169	60,805	70,380
Kansas	2,355,998	2,171,465	2,036,849	2,119,655	1,910,059	939,817	1,040,185	855,889	1,008,699	1,286,461
Kentucky	235,073	229,215	225,540	219,622	204,098	91,945	98,722	79,578	99,401	125,535
Louisiana	15,928,217	14,870,334	14,396,661	15,288,002	13,834,266	7,845,495	8,554,259	6,680,423	7,453,798	8,991,050
Michigan	1,167,447	1,000,492	918,122	872,011	714,168	375,302	457,886	346,890	389,482	450,558
Mississippi	1,042,196	959,685	841,736	893,474	781,652	408,859	471,568	389,693	483,854	568,774
Missouri	7,770*	6,313*	8,393*	7,838*	6,075*	1,678*	1,898*	2,262*	2,414*	3,139*
Montana	1,068,903	966,281	841,680	835,391	752,833	367,638	415,228	322,873	357,272	427,698
Nebraska	235,620	212,895	182,340	179,559	176,491	97,243	103,973	84,170	108,188	129,227
Nevada	16,772*	14,681*	19,278*	49,201*	79,014*	34,884*	35,788*	40,375*	50,844*	69,409*
New Mexico	2,507,743	2,259,984	2,199,445	2,276,150	2,107,745	1,130,380	1,271,526	1,052,853	1,227,214	1,508,350
New York	28,720	25,779	23,426	23,268	26,978	13,674	12,354	9,056	8,779	9,701
North Dakota	1,618,457	1,507,472	1,483,696	1,494,790	1,287,699	617,803	692,216	545,094	629,057	805,182
Ohio	489,327	450,244	421,284	423,159	376,349	208,485	211,705	177,890	184,555	231,085
Oklahoma	5,458,204	5,082,217	4,705,781	4,901,687	4,276,781	2,157,549	2,367,740	1,916,569	2,150,611	2,573,320
Pennsylvania	134,356	131,757	121,095	118,710	121,518	59,658	57,554	42,835	49,041	60,789
South Dakota	34,590	36,628	34,105	38,002	41,161	21,903	27,882	23,264	27,953	36,783
Tennessee	30,294*	36,337*	33,792*	25,760*	20,436*	9,660*	9,726*	8,408*	9,576*	10,018*
Texas	33,136,328	29,396,654	26,493,541	26,120,825	23,820,671	12,367,396	13,777,232	11,222,333	12,755,985	15,774,086
Utah	882,860	684,420	830,496	943,888	978,192	522,163	617,343	470,176	529,390	624,126
Virginia	455*	1,470*	1,755*	864*	624*	261	282*	349*	382*	330*
West Virginia	123,743	96,745	98,936	94,796	86,564	46,169	46,948	37,611	38,535	47,489
Wyoming	4,217,185	3,474,471	3,216,659	3,321,710	3,170,440	1,570,101	1,894,989	1,539,917	1,825,962	2,186,148
TOTAL U.S.	**99,396,384**	**90,029,512**	**83,048,464**	**84,102,132**	**78,883,982**	**39,634,833**	**46,960,095**	**37,528,304**	**44,119,870**	**53,774,281**

Source: Energy Information Administration and IPAA

* Estimated by IPAA

Natural Gas Revenues

(Thous.$)	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990*
Alabama	377,994	258,010	388,628	379,792	398,239	309,762	348,206	343,239	349,278	216,544
Alaska	150,390	166,549	201,984	211,064	237,796	152,421	338,247	480,870	535,471	543,810
Arizona	346	256	407	131	238*	135*	105*	101*	2,448*	2,333
Arkansas	168,305	265,421	292,115	343,309	395,502	328,998	323,236	323,152	405,603	318,070
California	978,476	1,186,489	1,482,707	1,810,065	1,650,711	1,335,810	1,006,352	955,123	841,835	706,892
Colorado	385,541	665,358	552,782	594,272	516,876	335,552	289,620	304,555	329,440	341,256
Florida	87,994	55,387	49,060	32,343	25,624	10,600	13,912	11,451	15,445	16,940
Illinois	3,199	3,044	2,925	4,253	3,667	4,850	3,071	2,930	3,176	2,468
Indiana	686	361	282	1,332	921	449	371	647	711	804
Kansas	588,905	648,691	682,536	694,309	651,347	563,491	525,608	783,733	845,611	859,716
Kentucky	61,925	78,924	70,547	104,581	174,771	150,767	127,628	188,490	154,248	137,321
Louisiana	14,034,981	16,046,230	14,236,742	15,902,400	13,336,447	10,818,821	9,118,066	9,376,283	9,242,188	9,585,286
Maryland	27	28	17	33	23	12	24	27	29	44
Michigan	436,416	488,233	497,298	543,459	474,678	458,233	476,267	464,741	492,922	497,416
Mississippi	581,774	653,873	571,551	547,951	457,025	299,974	271,070	230,739	202,211	172,846
Missouri	0	0	0	15	14	15	15	15	14	19
Montana	108,039	121,512	125,240	126,626	125,461	95,514	83,621	87,812	79,526	89,129
Nebraska	3,653	4,537	6,127	5,152	5,851	3,956	3,052	2,421	1,958	1,883
New Mexico	2,415,586	2,448,210	2,399,348	2,594,462	2,371,813	1,313,888	1,367,463	1,346,092	1,333,199	1,636,107
New York	42,918	59,539	68,669	100,800	106,361	101,578	51,352	53,947	44,953	44,274
North Dakota	82,592	123,781	157,354	159,321	138,003	74,382	80,935	115,494	91,090	54,679
Ohio	306,261	375,040	490,212	594,871	561,315	517,084	429,810	425,060	407,312	395,089
Oklahoma	3,796,094	5,300,289	4,896,073	5,401,564	4,782,762	3,278,913	2,947,052	3,265,280	3,474,474	3,429,213
Oregon	13,000	11,319	10,519	7,756	9,792	9,200	5,510	6,400	3,500	3,344
Pennsylvania	285,318	339,111	355,116	540,612	474,739	399,723	367,466	359,241	460,258	373,480
South Dakota	3,176	7,179	6,221	7,145	6,421	5,488	9,298	7,644	4,850	6,317
Tennessee	4,383	8,928	9,875	17,577	11,621	6,166	3,546	3,150	3,135	2,978
Texas	12,921,739	14,037,333	14,015,004	15,153,301	14,102,705	10,150,429	9,005,683	9,491,904	9,549,380	9,972,282
Utah	100,310	288,420	214,737	304,768	293,586	261,038	163,857	242,279	189,741	247,988
Virginia	19,141	25,387	14,342	26,703	45,424	37,796	39,984	38,322	39,278	39,256
West Virginia	483,753	482,720	403,242	495,869	557,800	528,181	616,000	533,573	616,402	602,330
Wyoming	1,137,082	1,367,396	1,411,882	1,715,388	1,253,861	1,016,230	876,445	778,859	825,467	754,583
TOTAL U.S.	**39,531,381**	**45,566,755**	**43,577,527**	**48,490,837**	**43,166,977**	**32,574,365**	**28,972,057**	**30,152,091**	**30,495,203**	**31,766,111**

Source: Energy Information Administration and IPAA.

* Estimated by IPAA.

Financial Statistics

	Rates of Return		Exploration and Development Outlays		
	Oil & Gas Companies	All Mfg. Companies	Larger Companies	Independents	Total Industry
	(%)		(mill. $)		
1973	N/A	14.5	5,465	3,021	8,486
1974	N/A	13.2	8,847	4,225	13,072
1975	N/A	11.6	6,897	4,836	11,733
1976	N/A	14.0	8,876	6,043	14,919
1977	N/A	14.1	10,311	6,600	16,911
1978	N/A	14.8	12,064	8,400	20,464
1979	N/A	15.1	21,822	11,099	32,921
1980	N/A	12.2	26,235	14,175	40,410
1981	N/A	12.9	31,992	23,698	55,690
1982	13.8	9.7	30,330	23,387	53,717
1983	12.0	12.3	24,201	22,047	46,248
1984	12.4	13.9	25,698	22,356	48,054
1985	9.1	10.7	23,097	20,538	43,635
1986	3.0	11.1	12,168	11,754	23,922
1987	5.4	14.5	10,555	9,208	19,763
1988	13.5	16.4	13,198	10,759	23,957
1989	12.7	14.7	11,557	9,795	21,352

Sources: Oil & Gas Journal, Standard & Poor's Compustat data base, Department of Commerce and API

Drilling Summary 1989

	Oil Wells	Gas Well	Dry Holes	Total Wells
Number of Wells Drilled	9,865	8,830	7,998	26,693
Footage Drilled (thous. ft.)	42,895	46,538	42,041	131,474
Total Cost (mill. $)	2,785	4,042	2,842	9,669
Average Depth (ft.)	4,348	5,270	5,256	4,925
Average Cost per Well ($)	282,273	457,790	355,392	362,243
Average Cost per Foot ($)	64.92	86.87	67.62	73.55

Source: Joint Association Survey
1990 data unavailable

Notes: Data includes all costs incurred through Christmastree. Totals may not add due to rounding.

Crude Oil Production By Chase Group

(thous. b/d)	Chase Group	All Other	Total Industry
1957	4,487	2,683	7,170
1958	4,141	2,569	6,710
1959	4,379	2,675	7,054
1960	4,423	2,612	7,035
1961	4,510	2,673	7,183
1962	4,706	2,626	7,332
1963	4,905	2,637	7,542
1964	5,017	2,597	7,614
1965	5,269	2,535	7,804
1966	5,628	2,667	8,295
1967	6,070	2,740	8,810
1968	6,312	2,784	9,096
1969	6,418	2,820	9,238
1970	6,814	2,823	9,637
1971	6,747	2,716	9,463
1972	6,730	2,711	9,441
1973	6,570	2,638	9,208
1974	6,173	2,601	8,774
1975	5,891	2,484	8,375
1976	5,587	2,545	8,132
1977	5,668	2,577	8,245
1978	6,193	2,514	8,707
1979	5,944	2,608	8,552
1980	6,071	2,526	8,597
1981	5,932	2,640	8,572
1982	5,964	2,685	8,649
1983	5,890*	2,798*	8,688
1984	5,870*	3,009*	8,879
1985	5,850*	3,121*	8,971
1986	5,750*	2,930*	8,680
1987	5,650*	2,654*	8,349
1988	5,633*	2,507*	8,140
1989	5,158*	2,468*	7,626
1990	4,974*	2,381*	7,355

Excluding Alaska North Slope

1978	5,103	2,514	7,617
1979	4,661	2,608	7,269
1980	4,554	2,526	7,080
1981	4,408	2,640	7,048
1982	4,343	2,685	7,028
1983	4,244*	2,798*	7,042
1984	4,208*	3,009*	7,217
1985	4,071*	3,121*	7,192
1986	3,932*	2,930*	6,862
1987	3,733*	2,654*	6,387
1988	3,616*	2,507*	6,123
1989	3,284*	2,468*	5,752
1990	3,201*	2,381*	5,582

Source:Chase Manhattan Bank

* Estimated by IPAA

Severance and Production Taxes

(thous. $)	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Alabama	55,757	58,036	72,486	114,302	84,215	64,863	41,592	47,965	49,841	45,042
Alaska	1,170,200	1,581,700	1,493,700	1,393,100	1,389,400	1,108,400	648,500	815,810	913,921	1,237,821
Arkansas	27,047	24,602	22,812	21,329	20,438	10,312	9,726	8,542	8,478	9,206
California*	300,280	342,941	369,730	405,412	441,413	386,987	358,992	375,851	379,385	366,400
Colorado	18,011	35,867	23,251	20,598	18,480	18,378	17,468	18,034	15,218	8,520
Florida	95,240	79,387	50,835	28,837	21,629	17,436	9,601	9,112	12,881	14,710
Indiana	1,835	1,764	1,578	1,546	1,398	686	867	726	804	810
Kansas	104,913	118,304	182,119	243,011	241,700	170,283	159,942	172,185	168,540	206,502
Kentucky	12,544	13,737	14,283	13,461	23,735	12,507	9,727	14,960	10,675	13,754
Louisiana	803,147	971,677	859,930	803,183	731,760	653,594	439,237	462,703	397,375	414,887
Maryland	3	2	1	3	1	1	2	2	2	1
Michigan	85,554	87,867	83,188	82,556	81,396	64,766	53,023	50,820	49,422	53,202
Mississippi	108,145	113,669	99,159	96,888	82,382	49,355	49,774	44,322	41,669	47,631
Montana	54,710	100,811	119,683	134,862	132,360	116,054	100,261	64,752	61,959	56,837
Nebraska	4,776	5,969	4,325	5,128	4,455	2,717	2,625	2,289	3,015	3,365
Nevada	4	3	25	98	152	134	160	180	161	201
New Mexico	369,331	348,437	347,548	381,537	365,029	234,000	262,290	238,760	279,970	253,263
North Dakota	91,210	126,138	166,700	160,436	136,200	81,775	90,665	72,215	59,017	79,668
Ohio	1,731	1,333	1,856	4,396	5,752	6,045	5,316	5,148	4,816	4,674
Oklahoma	601,846	744,629	778,169	709,917	709,364	571,965	372,883	392,637	375,123	403,620
Oregon	0	427	416	318	429	241	121	139	53	111
South Dakota	1,270	1,707	1,707	1,557	1,824	1,821	979	1,243	1,023	1,355
Tennessee	530	931	1,398	1,201	980	476	398	343	337	404
Texas	2,204,602	2,373,846	2,251,314	2,215,647	2,163,018	1,547,926	1,178,052	1,055,563	1,168,018	1,084,227
Utah	16,041	22,296	26,021	38,443	49,354	46,110	22,781	30,981	24,263	26,222
West Virginia	28,591	37,609	36,590	44,125	50,777	55,331	40,133	29,553	24,965	23,206
Wyoming	260,698	270,372	255,798	270,180	244,316	137,999	138,915	133,836	151,698	265,473
TOTAL U.S.	6,418,016	7,464,061	7,264,622	7,192,071	7,001,957	5,360,162	4,097,999	4,048,671	3,824,730	4,621,112

Source: Various state and industry contacts.

Notes: Figures include all state and local tax revenues.

*California data represents property taxes associated with the severance of oil and gas applied to minerals from the lease.

States vary on the use of fiscal or calendar year data.

Production

Producing Crude Oil Wells

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Alabama	692	719	741	759	810	844	875	892	931	872
Alaska	700	760	672	640	977	1,109	1,216	1,305	1,337	1,466
Arizona	35	36	34	31	28	24	23	20	25	22
Arkansas	8,249	8,629	8,370	9,490	9,700	10,047	8,398	7,865	4,340	7,265
California	47,362	47,231	47,197	48,541	49,874	43,717	45,694	45,819	43,745	43,375
Colorado	2,898	3,113	4,591	5,360	5,457	5,502	5,642	6,286	6,362	6,596
Florida	117	123	137	138	149	114	122	109	101	83
Illinois	26,100	27,600	28,967	30,045	31,100	32,025	32,307	32,262	32,441	31,874
Indiana	5,715	6,047	6,465	6,792	7,164	7,610	7,449	7,449	7,543	7,506
Kansas	42,402	46,189	49,348	49,198	51,888	48,816	48,051	47,484	44,969	45,470
Kentucky	14,585	15,109	15,562	19,980	21,844	22,639	22,974	22,883	22,859	22,741
Louisiana	25,320	22,380	23,376	24,508	26,354	29,921	29,758	27,079	22,872	23,812
Michigan	4,417	4,536	4,913	4,881	5,143	4,885	4,996	4,866	5,557	4,570
Mississippi	3,154	2,640	2,727	2,562	3,468	2,235	2,143	2,050	3,589	2,168
Missouri	421	499	552	557	581	450	200	286	807	854
Montana	3,968	4,311	4,675	4,201	4,196	3,933	4,050	4,128	4,001	3,854
Nebraska	1,870	2,006	2,100	2,095	2,091	1,838	1,852	1,824	1,787	1,440
Nevada	28	31	34	37	45	29	35	38	46	46
New Mexico	16,289	16,526	17,409	18,146	18,697	18,409	18,401	17,890	17,787	18,546
New York	5,300	5,320	5,432	4,678	4,811	4,632	4,428	4,245	4,350	4,043
North Dakota	2,570	2,870	3,734	3,404	3,697	3,543	3,474	3,511	3,442	3,546
Ohio	22,441	24,752	26,287	26,878	27,975	29,937	30,013	30,134	30,194	30,089
Oklahoma	82,639	91,745	95,868	99,600	102,342	100,261	101,745	97,685	96,344	81,667
Pennsylvania	26,138	25,285	24,657	20,739	24,000	20,000	14,271	28,000	27,218	22,338
South Dakota	120	130	140	138	165	148	149	151	156	149
Tennessee	489	650	693	775	798	806	648	720	713	736
Texas	180,627	187,626	195,595	203,664	209,040	201,272	198,163	198,008	186,226	188,829
Utah	1,543	1,583	1,634	1,799	1,944	1,858	1,785	1,849	2,234	1,972
West Virginia	14,700	14,900	15,300	15,475	15,895	15,750	15,850	15,950	15,940	15,950
Wyoming	11,574	11,792	11,349	11,561	12,038	11,879	10,953	11,850	11,539	11,397
Federal Waters	4,535	4,985	4,710	4,104	4,327	4,425	4,487	4,526	3,881	4,468
Other	11	19	21	31	28	32	29	29	20	25
TOTAL U.S.	**557,009**	**580,142**	**603,290**	**620,807**	**646,626**	**628,690**	**620,181**	**623,587**	**603,356**	**587,762**

Source: *World Oil*

Notes: Data include wells on artificial lift and flowing.
Figures quoted as of December 31st each year.

Producing Natural Gas Wells

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Alabama	309	461	540	664	822	976	1,100	1,190	1,580	2,038
Alaska	120	123	103	78	81	103	87	108	88	109
Arkansas	1,337	1,679	1,850	2,371	2,550	2,719	2,847	2,996	2,830	3,460
California	1,154	1,050	1,082	1,168	1,319	1,285	1,293	1,269	1,181	1,169
Colorado	3,988	3,667	4,072	3,663	4,529	3,573	3,948	4,326	4,481	5,097
Illinois	70	60	67	157	190	217	238	277	296	356
Indiana	698	720	736	1,194	1,220	1,289	808	1,298	1,295	1,311
Kansas	11014	11,254	11,494	11,503	11,776	11,485	11,280	12,538	13,935	14,043
Kentucky	8,033	8,084	8,234	9,013	9,515	9,926	10,493	10,797	11,250	11,713
Louisiana	12,763	13,503	13,894	14,236	14,423	16,479	16,647	16,154	13,873	13,530
Michigan	667	667	539	749	755	740	670	687	1,265	1,438
Mississippi	570	520	525	671	690	555	749	535	739	629
Montana	2,142	2,069	2,043	2,088	2,033	1,818	2,100	2,023	2,575	2,428
Nebraska	26	22	24	21	N/A	N/A	N/A	N/A	N/A	N/A
New Mexico	14,968	16,025	16,214	16,401	23,627	22,362	23,413	18,964	19,191	19,537
New York	2,500	2,650	2,969	3,800	4,324	4,927	5,180	5,340	5,184	5,406
North Dakota	51	66	123	90	98	103	103	101	103	103
Ohio	18,619	21,070	24,621	27,846	32,148	32,745	33,369	33,931	34,232	34,697
Oklahoma	16,994	20,742	22,135	23,647	24,756	25,734	26,595	27,307	27,443	24,110
Pennsylvania	20,526	21,500	23,000	24,000	24,000	26,500	26,000	28,000	29,000	30,000
South Dakota	39	37	40	40	42	44	52	52	54	52
Tennessee	210	360	415	726	820	788	790	764	598	527
Texas	39,575	42,295	43,395	44,834	46,615	46,442	45,552	45,984	46,792	48,075
Utah	226	282	322	659	655	411	497	460	834	742
Virginia	274	290	292	499	581	562	685	710	739	819
West Virginia	26,925	28,350	29,675	30,700	32,500	33,150	33,950	34,650	36,240	37,000
Wyoming	1,888	1,889	1,919	1,933	2,161	2,084	2,104	2,147	2,172	2,431
Federal Waters	3,907	4,200	4,000	3,552	3,483	3,404	3,213	3,298	3,124	[illegible]
Other	16	28	31	228	52	89	93	98	131	147
TOTAL U.S.	**189,609**	**203,663**	**214,354**	**226,077**	**245,765**	**250,510**	**253,856**	**256,004**	**261,225**	**264,5[illegible]**

Source: *World Oil*

Notes: Data include natural gas distillate wells.
Figures quoted as of December 31st each year.

Crude Oil Production

(thous. bbls.)	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Alabama	20,680	20,014	18,746	19,804	21,581	21,122	20,607	20,727	19,813	18,538
Alaska	587,337	618,910	625,527	630,401	666,233	681,310	715,955	738,143	683,980	647,310
Arizona	357	335	237	215	175	161	131	113	138	122
Arkansas	18,352	18,849	18,849	18,730	19,044	15,778	14,230	13,456	11,368	10,387
California	384,958	401,572	404,688	412,020	423,877	406,665	395,698	387,204	364,364	350,900
Colorado	30,303	30,545	29,050	28,845	30,246	29,309	28,802	32,819	31,102	30,454
Florida	34,773	25,626	19,476	14,462	11,458	9,383	8,270	7,746	7,289	5,674
Illinois	24,090	27,710	29,200	28,868	30,265	27,245	23,980	22,476	20,380	19,954
Indiana	4,721	5,563	5,321	5,526	5,168	4,759	3,738	3,665	3,310	3,000
Kansas	65,810	70,525	71,594	75,729	75,407	67,034	59,884	58,824	55,484	55,427
Kentucky	6,548	7,349	7,886	7,777	7,790	6,475	5,743	5,458	5,414	5,411
Louisiana	449,315	458,395	479,569	515,268	508,239	512,108	476,030	438,924	405,318	390,406
Michigan	32,665	31,462	31,736	30,554	27,300	25,688	25,972	23,250	21,566	19,675
Mississippi	34,204	33,047	31,455	32,776	30,641	29,997	28,103	27,875	28,462	27,033
Missouri	226	202	269	285	243	110	110	156	136	146
Montana	30,813	30,921	29,225	29,761	29,768	27,072	25,059	23,329	20,979	19,810
Nebraska	6,671	6,872	6,380	6,452	6,943	7,098	6,091	5,978	6,232	5,890
Nevada	700	613	810	1,907	3,039	2,907	3,112	3,230	3,218	4,012
New Mexico	71,568	71,024	75,169	79,336	78,530	75,712	72,328	71,235	68,713	67,247
New York	841	834	831	840	1,071	853	710	566	496	416
North Dakota	45,424	47,271	50,690	52,652	50,857	45,628	41,351	39,357	36,744	36,716
Ohio	13,551	14,571	14,971	15,271	14,988	13,442	12,153	11,711	10,219	10,008
Oklahoma	154,056	158,621	158,604	168,385	162,739	149,105	134,378	128,975	117,971	112,274
Pennsylvania	3,729	4,282	4,282	4,284	4,851	3,783	3,302	2,807	2,702	2,643
South Dakota	973	1,158	1,172	1,340	1,596	1,586	1,644	1,657	1,613	1,648
Tennessee	918	1,132	1,056	920	786	644	614	601	532	508
Texas	945,132	925,296	902,676	904,774	888,831	839,606	785,475	762,905	716,226	705,460
Utah	25,860	22,440	29,534	34,689	40,792	39,172	35,788	33,018	28,416	27,604
Virginia	13	49	65	32	26	18	17	25	21	15
West Virginia	3,473	3,227	3,628	3,524	3,555	3,145	2,835	2,621	2,243	2,143
Wyoming	130,563	118,300	118,303	124,269	128,514	121,337	115,267	114,322	109,143	103,855
TOTAL U.S.	**3,128,624**	**3,156,715**	**3,170,999**	**3,249,696**	**3,274,553**	**3,168,252**	**3,047,378**	**2,983,172**	**2,783,588**	**2,684,687**
DAILY AVG.	**8,572**	**8,649**	**8,688**	**8,879**	**8,971**	**8,680**	**8,349**	**8,151**	**7,626**	**7,355**

Source: Energy Information Administration

Note: Data include lease condensate.

Natural Gas Production

(MMcf)	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Alabama	79,244	75,003	90,801	101,821	107,342	107,184	117,241	129,524	128,411	135,340
Alaska	242,564	264,364	276,691	289,129	321,346	304,841	359,837	378,638	393,729	402,822
Arizona	187	99	132	45	85	63	60	56	1,360	1,296*
Arkansas	92,986	124,611	127,561	135,161	155,099	131,075	141,151	166,573	168,300	187,100
California	380,730	383,977	415,324	476,333	491,283	462,218	424,621	399,633R	362,860	355,222
Colorado	195,706	209,892	163,545	173,257	178,233	163,684	164,557	191,544	216,737	220,165
Florida	32,470	22,515	21,056	12,585	10,545	8,833	8,281	7,484	7,534	6,886
Illinois	1,295	1,162	1,030	1,530	1,324	1,887	1,371	1,338	1,477	1,435*
Indiana	330	233	135	394	367	365	217	412	416	400*
Kansas	640,114	429,597	434,736	465,979	512,872	465,695	457,050	576,274	587,230	558,257
Kentucky	61,312	51,924	46,720	61,518	73,126	80,195	70,125	73,629	72,417	70,784*
Louisiana	6,780,184	6,171,627	5,332,113	5,825,055	5,013,702	4,895,394	5,122,509	5,180,267	5,078,125	5,237,861
Maryland	56	36	31	60	39	20	44	29	34	37*
Michigan	152,593	153,051	138,910	144,537	131,855	127,287	146,996	146,145	155,988	166,360
Mississippi	181,238	167,231	151,204	157,911	144,172	140,833	139,727	124,053	102,645	97,653
Missouri	0	0	0	4	4	4	4	4	4	5*
Montana	56,565	56,517	51,967	51,474	52,494	46,592	46,456	51,654	51,307	49,793
Nebraska	2,519	2,280	2,091	2,300	944	1,403	1,261	910	878	833*
New Mexico	1,134,078	991,178	895,279	957,366	905,272	702,614	823,773	791,819	854,615	962,416
New York	16,074	15,877	17,836	25,200	31,561	29,964	25,676	23,455	20,433	19,854*
North Dakota	42,573	53,818	69,319	70,496	72,633	55,098	62,258	57,747	51,174	57,557
Ohio	141,134	138,391	151,300	186,480	182,245	182,072	166,593	166,690	159,730	155,547*
Oklahoma	2,019,199	1,934,412	1,730,061	1,985,869	1,936,341	1,917,493	2,004,797	2,106,632	2,185,204	2,184,212
Oregon	5,000	3,399	3,159	2,790	4,080	4,600	3,800	4,000	2,500	2,406*
Pennsylvania	122,454	121,111	118,372	166,342	150,234	159,889	163,318	167,089	191,774	186,740*
South Dakota	1,155	2,331	1,846	1,947	2,558	2,231	3,431	3,920	4,369	4,211*
Tennessee	1,719	2,976	3,950	5,022	4,686	3,464	2,707	2,100	1,900	1,805*
Texas	6,910,021	6,468,817	5,938,561	6,185,021	6,052,663	6,151,775	6,126,315	6,286,029	6,241,425	6,351,772
Utah	91,191	94,255	63,158	74,698	83,405	90,013	87,158	101,372	120,089	145,875
Virginia	8,903	6,880	4,346	8,901	15,041	15,427	19,223	18,424	17,935	17,447*
West Virginia	161,251	150,850	130,078	143,730	144,883	135,431	160,000	182,000R	198,200	194,300
Wyoming	410,499	424,657	443,988	516,683	416,565	403,266	497,980	509,058	665,699	692,278
TOTAL U.S.	**19,965,344**	**18,523,071**	**16,825,300**	**18,229,638**	**17,197,999**	**16,790,910**	**17,348,537**	**17,841,474R**	**18,044,499**	**18,468,669**

Source: Energy Information Administration

*Estimated by IPAA

Notes: Data represent marketed production.
R Revised data.

All 1989 figures are revised.

Stripper Wells

Stripper Well Production

(thous. bbls.)	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Alabama	125	122	158	173	172	189	191	193	301	1,461
Arizona	16	23	24	26	29	28	25	30	29	26
Arkansas	5,690	5,465	5,132	7,118	5,653	5,286	5,114	4,888	6,688	6,575
California	44,110	54,804	55,419	55,993	57,125	41,573	37,182	37,796	38,076	37,286
Colorado	1,989	2,159	2,204	3,630	3,330	2,682	6,216	7,323	6,610	5,986
Illinois	20,167	22,238	23,989	25,889	25,984	27,719	24,157	21,682	20,026	18,407
Indiana	4,019	4,781	4,568	4,336	4,401	4,104	3,827	3,657	3,576	3,309
Kansas	44,545	45,010	47,629	48,267	48,665	50,861	61,435	57,803	57,051	46,189
Kentucky	4,573	4,479	5,144	5,522	6,630	6,696	5,514	4,882	4,564	4,396
Louisiana	7,657	9,012	9,172	9,000	9,844	9,000	10,059	8,810	8,242	7,430
Michigan	4,717	2,449	2,820	3,145	3,228	3,272	2,782	2,674	3,891	3,136
Mississippi	1,890	3,805	2,237	1,286	1,330	1,721	1,121	1,270	780	706
Missouri	127	226	53	271	271	250	182	101	147	115
Montana	2,710	2,748	2,881	3,104	2,577	2,937	2,709	2,651	2,564	2,448
Nebraska	2,237	2,510	2,879	3,418	2,974	2,947	2,617	2,688	2,446	2,111
Nevada	0	0	9	0	0	0	0	0	0	0
New Mexico	12,924	13,463	14,207	14,722	15,016	15,367	14,747	14,377	14,653	14,309
New York	824	849	719	774	680	601	489	511	485	431
North Dakota	1,225	1,386	1,493	1,537	1,756	1,905	1,693	1,833	1,898	1,925
Ohio	9,050	9,486	10,199	10,480	10,690	10,491	9,767	8,829	8,508	7,424
Oklahoma	79,945	83,249	94,237	94,430	94,046	91,842	95,903	109,082	109,440	81,675
Pennsylvania	2,651	3,606	3,718	3,951	4,242	4,257	3,356	2,870	2,583	2,602
South Dakota	25	39	55	44	82	65	34	57	39	55
Tennessee	293	291	N/A	584	510	451	475	445	489	457
Texas	141,825	145,940	143,929	153,689	152,720	158,738	147,986	141,704	140,504	129,894
Utah	220	377	N/A	543	1,089	1,550	878	935	933	927
Virginia	10	13	49	22	27	21	14	16	16	21
West Virginia	2,313	2,607	2,683	3,116	3,270	3,346	2,988	2,765	2,572	2,224
Wyoming	5,211	5,367	6,355	6,944	7,119	7,983	7,984	6,963	5,690	5,388
TOTAL U.S.	**401,095**	**426,502**	**441,951**	**462,013**	**463,459**	**455,882**	**449,446**	**446,837**	**442,800**	**386,916**

Sources: Interstate Oil and Gas Compact Commission and National Stripper Well Association

Notes: 1990 data are unavailable.
Totals may not add due to rounding.

Producing Stripper Wells

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Alabama	68	73	92	95	98	100	124	122	148	498
Arizona	10	12	14	17	14	14	16	15	13	13
Arkansas	6,820	5,847	5,167	7,218	4,738	4,942	4,416	4,438	7,597	7,428
California	25,400	26,566	26,354	26,358	26,650	29,230	29,044	26,988	26,527	25,828
Colorado	1,143	1,255	1,354	1,861	1,690	1,798	4,269	5,097	5,069	6,357
Illinois	24,501	25,472	26,813	28,566	29,942	30,593	31,649	31,883	32,358	34,417
Indiana	5,022	5,874	5,353	5,854	6,134	5,457	5,165	4,985	6,171	6,281
Kansas	41,876	42,924	44,521	47,592	45,749	48,235	50,182	51,953	46,720	45,559
Kentucky	14,075	14,130	14,275	17,000	16,433	17,674	17,992	18,073	18,306	19,358
Louisiana	15,889	15,950	12,010	16,500	16,500	16,000	15,500	15,000	16,500	14,788
Michigan	3,325	3,057	3,361	3,367	3,500	3,475	3,285	3,015	3,040	3,110
Mississippi	1,523	2,138	1,923	837	837	811	681	644	606	561
Missouri	301	440	530	548	548	429	388	289	700	668
Montana	2,082	2,058	2,243	2,673	3,085	3,376	3,493	3,300	3,267	3,116
Nebraska	1,223	1,414	1,585	1,672	1,707	1,716	1,637	1,589	1,505	1,247
Nevada	4	0	0	0	0	0	0	0	0	0
New Mexico	12,519	13,226	13,882	14,280	14,749	15,199	14,466	14,622	14,723	15,050
New York	5,220	5,345	5,259	4,228	4,532	4,448	4,309	4,221	4,011	3,968
North Dakota	878	836	959	922	1,016	1,091	1,106	1,125	1,186	1,180
Ohio	19,650	21,982	22,966	24,263	25,129	26,412	28,652	28,908	29,251	29,634
Oklahoma	66,128	69,781	73,328	77,729	82,431	83,034	84,425	77,154	74,598	70,741
Pennsylvania	25,991	25,285	23,438	21,831	19,540	11,877	14,271	13,255	17,303	22,338
South Dakota	12	23	33	33	30	24	17	27	17	24
Tennessee	387	398	N/A	716	689	952	848	853	934	839
Texas	103,594	107,596	111,671	117,178	126,[illegible]	130,311	123,796	123,945	123,802	119,693
Utah	125	196	N/A	217	[illegible]	519	853	824	796	897
Virginia	8	12	20	26	[illegible]	30	49	51	53	44
West Virginia	14,150	14,300	14,550	14,900	15,200	15,500	15,800	15,925	15,790	15,970
Wyoming	3,252	3,349	4,792	5,020	5,020	5,200	3,996	3,486	3,159	2,982
TOTAL U.S.	**395,176**	**409,539**	**416,493**	**441,501**	**452,543**	**458,447**	**460,429**	**451,787**	**454,150**	**452,589**

Sources: Interstate Oil and Gas Compact Commission and
National Stripper Well Association

Notes: 1990 data are unavailable.
Figures quoted as of December 31st each year.

World Crude Oil Reserves

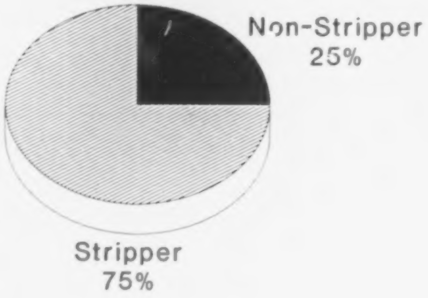
(mill. bbls.)	United States	Canada	Latin America	Middle East	Africa	Asia Pacific	Western Europe	Communist Nations	Total World
1978	31,335	6,860	41,247	369,996	57,892	20,007	23,966	94,000	641,772
1979	29,810	6,800	56,473	361,947	57,072	19,355	23,476	90,000	642,175
1980	29,805	6,400	69,490	362,071	55,148	19,631	23,085	86,300	651,930
1981	29,426	7,300	84,982	362,840	56,172	19,151	24,635	85,845	670,350
1982	27,858	7,020	78,482	369,286	57,822	19,756	22,924	85,115	668,262
1983	27,735	6,730	81,676	370,101	56,907	18,969	23,020	84,600	669,738
1984	28,446	7,075	83,316	398,381	55,541	18,530	24,426	84,100	699,813
1985	28,416	6,500	84,242	398,036	56,734	18,856	26,413	81,370	700,567
1986	26,889	6,850	88,755	401,879	55,194	19,024	21,938	79,250	699,779
1987	27,256	6,825	114,321	564,680	55,250	19,354	22,448	79,200	889,334
1988	26,825	6,786	121,951	571,519	56,964	21,367	18,557	83,800	907,768
1989	26,501	6,133	125,027	660,247	58,387	22,545	18,822	84,100	1,002,213
1990	26,177*	5,783	121,091	662,598	59,892	50,242	14,476	58,855	999,113

Sources: Energy Information Administration, and *Oil and Gas Journal*

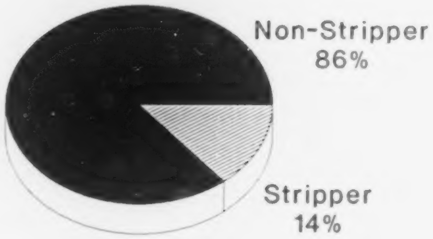
Notes: Totals may not add due to rounding.
Data quoted as of December 31st.
* Preliminary estimate

STRIPPER WELLS AS A PERCENT OF:

Total Producing Oil Wells



Total Crude Oil Production



Source: National Stripper Well Assoc., (1989 data), EIA

Prices

Crude Oil Wellhead Prices

($/bbl.)	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Alabama	35.80	32.32	30.07	29.39	25.77	13.91	16.76	13.86	17.27	22.10
Alaska	23.60	20.08	17.92	18.13	17.12	6.71	10.95	8.48	12.08	15.60
Arizona	24.00*	31.00*	30.00*	28.00*	27.00*	15.15*	17.35*	14.57*	18.30*	23.38*
Arkansas	33.69	30.12	28.28	28.15	25.79	14.54	17.23	14.41	17.34	21.55
California	26.80	24.58	22.61	22.09	22.14	11.90	13.91	10.97	14.06	17.80
Colorado	35.69	31.56	28.92	28.09	25.64	13.98	17.71	14.83	18.86	23.16
Florida	25.00*	32.00*	31.10*	31.00*	29.00*	23.13*	16.05*	16.43*	11.75*	18.25*
Illinois	36.03	31.69	29.12	28.76	26.90	14.70	17.53	14.79	18.36	23.36
Indiana	36.07	31.66	29.06	28.72	26.82	14.55	17.49	14.78	18.37	23.46
Kansas	35.80	30.79	28.45	27.99	25.33	14.02	17.37	14.55	18.18	23.21
Kentucky	35.90	31.19	28.60	28.24	26.20	14.20	17.19	14.58	18.36	23.20
Louisiana	35.45	32.44	30.02	29.67	27.22	15.32	17.97	15.22	18.39	23.03
Michigan	35.74	31.80	28.93	28.54	26.16	14.61	17.63	14.92	18.06	22.90
Mississippi	30.47	29.04	26.76	27.26	25.51	13.63	16.78	13.98	17.00	21.04
Missouri	34.38*	31.25*	31.20*	27.50*	25.00*	15.25*	17.25*	14.50*	17.75*	21.50*
Montana	34.69	31.25	28.80	28.07	25.29	13.58	16.57	13.84	17.03	21.59
Nebraska	35.32	30.98	28.58	27.83	25.42	13.70	17.07	14.08	17.36	21.94
Nevada	23.96*	23.95*	23.80*	25.80*	26.00*	12.00*	11.50*	12.50*	15.80*	17.30*
New Mexico	35.04	31.82	29.26	28.69	26.84	14.93	17.58	14.78	17.86	22.43
New York	34.15	30.91	28.19	27.70	25.19	16.03	17.40	16.00*	17.70*	23.32
North Dakota	35.63	31.89	29.27	28.39	25.32	13.54	16.74	13.85	17.12	21.93
Ohio	36.11	30.90	28.14	27.71	25.11	15.51	17.42	15.19	18.06	23.09
Oklahoma	35.43	32.04	29.67	29.11	26.28	14.47	17.62	14.86	18.23	22.92
Pennsylvania	36.03	30.77	28.28	27.71	25.05	15.77	17.43	15.26	18.15	23.00
South Dakota	35.55	31.63	29.10	28.36	25.79	13.81	16.96	14.04	17.33	22.32
Tennessee	33.00*	32.10*	32.00*	28.00*	26.00*	15.00*	15.84*	13.99*	18.00*	19.72*
Texas	35.06	31.77	29.35	28.87	26.80	14.73	17.54	14.71	17.81	22.36
Utah	34.14	30.50	28.12	27.21	23.98	13.33	17.25	14.24	18.63	22.61
Virginia	35.00*	30.00*	27.00*	27.00*	24.00*	14.50*	16.58*	13.95*	18.17*	22.00*
West Virginia	35.63	29.98	27.27	26.90	24.35	14.68	16.56	14.35	17.18	22.16
Wyoming	32.30	29.37	27.19	26.73	24.67	12.94	16.44	13.47	16.73	21.05
TOTAL U.S.	**31.77**	**28.52**	**26.19**	**25.88**	**24.09**	**12.51**	**15.41**	**12.58**	**15.85**	**20.03**

Source: Energy Information Administration
* Estimated by IPAA

Note: Data represent average first purchase prices of crude oil at the lease or wellhead.

Natural Gas Wellhead Prices

($/Mcf)	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Alabama	4.77	3.44	4.28	3.73	3.71	2.89	2.97	2.65	2.72	1.60
Alaska	.62	.63	.73	.73	.74	.50	.94	1.27	1.36	1.35
Arizona	1.85	2.59	3.08	2.90	2.80*	2.15*	1.75*	1.80*	1.80*	1.80
Arkansas	1.81	2.13	2.29	2.54	2.55	2.51	2.29	1.94	2.41	1.70
California	2.57	3.09	3.57	3.80	3.36	2.89	2.37	2.39	2.32	1.99
Colorado	1.97	3.17	3.38	3.43	2.90	2.05	1.76	1.59	1.52	1.55
Florida	2.71	2.46	2.33	2.57	2.43	1.20	1.68	1.53	2.05	2.46
Illinois	2.47	2.62	2.84	2.78	2.77	2.57	2.24	2.19	2.15	1.72
Indiana	2.08	1.55	2.09	3.38	2.51	1.23	1.71	1.57	1.71	2.01
Kansas	.92	1.51	1.57	1.49	1.27	1.21	1.15	1.36	1.44	1.54
Kentucky	1.01	1.52	1.51	1.70	2.39	1.88	1.82	2.56	2.13	1.94
Louisiana	2.07	2.60	2.67	2.73	2.66	2.21	1.78	1.81	1.82	1.83
Maryland	.48	.77	.56	.55	.59	.58	.54	.93	.85	1.20
Michigan	2.86	3.19	3.58	3.76	3.60	3.60	3.24	3.18	3.16	2.99
Mississippi	3.21	3.91	3.78	3.47	3.17	2.13	1.94	1.86	1.97	1.77
Missouri	2.50*	3.00*	3.45*	3.75	3.50	3.75	3.75	3.75	3.50*	3.80
Montana	1.91	2.15	2.41	2.46	2.39	2.05	1.80	1.70	1.55	1.79
Nebraska	1.45	1.99	2.93	2.24	3.01	2.82	2.42	2.66	2.23	2.26
New Mexico	2.13	2.47	2.68	2.71	2.62	1.87	1.66	1.70	1.56	1.70
New York	2.67	3.75	3.85	4.00	3.37	3.39	2.00	2.30	2.20	2.23
North Dakota	1.94	2.30	2.27	2.26	1.90	1.35	1.30	2.00	1.78	.95
Ohio	2.17	2.71	3.24	3.19	3.08	2.84	2.58	2.55	2.55	2.54
Oklahoma	1.88	2.74	2.83	2.72	2.47	1.71	1.47	1.55	1.59	1.57
Oregon	2.60	3.33	3.33	2.78	2.40	2.00	1.45	1.60	1.40	1.39
Pennsylvania	2.33	2.80	3.00	3.25	3.16	2.50	2.25	2.15	2.40*	2.00
South Dakota	2.75	3.08	3.37	3.67	2.51	2.46	2.71	1.95	1.11	1.50
Tennessee	2.55	3.00	2.50	3.50	2.48	1.78	1.31	1.50	1.65	1.65
Texas	1.87	2.17	2.36	2.45	2.33	1.65	1.47	1.51	1.53	1.57
Utah	1.10	3.06	3.40	4.08	3.52	2.90	1.88	2.39	1.58	1.70
Virginia	2.15	3.69	3.30	3.00	3.02	2.45	2.08	2.08	2.19*	2.25
West Virginia	3.00	3.20	3.10	3.45	3.85	3.90	3.85	3.05	3.11	3.10
Wyoming	2.77	3.22	3.18	3.32	3.01	2.52	1.76	1.53	1.24	1.09
TOTAL U.S.	**1.98**	**2.46**	**2.59**	**2.66**	**2.51**	**1.94**	**1.67**	**1.69**	**1.69**	**1.72**

Source: Energy Information Administration
* Estimated by IPAA

Note: All 1990 prices for states are estimated by IPAA.

GAS COMPRESSORS
ARIEL CORPORATION ARIEL
713 491-4914 • FAX 713 491-8105 • TELEX 79-0043
25-3600 BHP

Wholesale Prices—Total U.S.

	Motor Gasoline	Kerosene	Distillate Fuel Oil	Residual Fuel Oil	Average of Four Products		Crude Oil
	(c/gal.)				(c/gal.)	($/bbl.)	($/bbl.)
1936	6.32	3.94	3.39	1.81	4.41	1.85	1.09
1937	6.68	4.81	3.96	2.08	4.80	2.02	1.17
1938	5.97	4.57	3.62	1.55	4.22	1.77	1.14
1939	5.79	4.16	3.34	1.50	4.06	1.71	1.04
1940	5.26	4.36	3.55	1.74	3.91	1.64	1.02
1941	6.05	4.40	3.67	2.05	4.41	1.85	1.14
1942	6.14	4.56	3.91	2.18	4.54	1.91	1.20
1943	6.32	4.72	4.09	2.34	4.71	1.98	1.20
1944	6.47	4.78	4.34	2.49	4.87	2.05	1.20
1945	6.48	5.18	5.33	2.60	4.93	2.07	1.20
1946	6.60	5.70	5.06	3.05	5.26	2.21	1.39
1947	8.57	7.28	6.51	4.31	6.92	2.91	1.93
1948	10.53	9.92	8.94	5.72	8.81	3.70	2.60
1949	10.71	9.11	7.72	3.31	7.96	3.34	2.54
1950	10.86	9.39	7.97	3.98	8.29	3.48	2.51
1951	11.40	9.85	8.50	4.42	8.79	3.69	2.53
1952	11.38	9.90	8.52	3.84	8.62	3.62	2.53
1953	12.01	10.23	8.83	3.73	8.96	3.76	2.68
1954	11.66	10.40	8.94	3.97	8.88	3.73	2.78
1955	11.62	10.53	9.08	4.53	9.06	3.81	2.77
1956	11.75	10.99	9.45	5.30	9.43	3.96	2.79
1957	12.34	11.54	10.05	6.15	10.10	4.24	3.09
1958	11.74	10.96	9.39	4.82	9.27	3.89	3.01
1959	11.64	11.26	9.31	4.79	9.22	3.87	2.90
1960	11.61	11.17	8.79	4.88	9.15	3.84	2.88
1961	11.62	11.49	9.10	4.85	9.21	3.87	2.89
1962	11.52	11.42	9.11	4.78	9.13	3.84	2.90
1963	11.35	11.51	9.18	4.61	9.01	3.79	2.89
1964	11.27	10.93	8.65	4.50	8.83	3.71	2.88
1965	11.52	11.28	9.04	4.81	9.12	3.83	2.86
1966	11.59	11.49	9.09	4.73	9.15	3.84	2.88
1967	11.84	11.96	9.71	4.53	9.33	3.92	2.92
1968	11.55	12.03	9.84	4.30	9.14	3.84	2.94
1969	11.80	11.98	10.06	4.20	9.27	3.89	3.09
1970	12.33	12.43	10.45	6.14	10.20	4.28	3.18
1971	12.70	12.90	10.75	7.76	10.94	4.59	3.39
1972	12.70	12.87	10.61	7.60	10.87	4.57	3.39
1973	14.72	14.08	12.61	8.45	12.49	5.25	3.89
1974	25.53	24.02	22.57	20.43	23.48	9.86	6.87
1975	30.27	27.41	26.09	22.03	27.03	11.35	7.67
1976	33.82	31.67	30.38	21.66	29.55	12.41	8.19
1977	36.99	35.81	34.41	25.87	33.21	13.95	8.57
1978	39.22	37.23	35.66	23.00	33.72	14.16	9.00
1979	56.84	56.60	54.47	33.63	49.50	20.79	12.64
1980	87.40	80.26	78.21	44.43	72.77	30.56	21.59
1981	101.63	101.03	97.20	61.17	88.75	37.28	31.77
1982	94.56	97.18	91.95	57.80	83.27	34.97	28.52
1983	86.97	85.12	80.05	57.30	76.94	32.31	26.19
1984	81.14	84.75	79.62	59.14	74.49	31.29	25.88
1985	81.11	81.69	76.66	56.41	73.06	30.69	24.09
1986	47.74	49.92	44.91	36.23	43.97	18.47	12.51
1987	53.22	56.75	52.25	45.36	50.89	21.37	15.40
1988	50.31	50.72	46.10	38.72	46.22	19.41	12.58
1989	59.15	60.78	56.02	40.87	53.28	22.38	15.85

Sources: Petroleum product prices from IPAA.
Crude oil wellhead prices from
Energy Information Administration.

Notes: Data reflect price trends only, not actual sale prices. Motor gasoline prices represent leaded fuel prior to 1982, and unleaded thereafter.

Wholesale Prices—East of California

	Motor Gasoline	Kerosene	Distillate Fuel Oil	Residual Fuel Oil	Average of Four Products		Crude Oil
	(¢/gal.)				(¢/gal.)	($/bbl.)	($/bbl.)
1936	6.12	4.01	3.52	1.86	4.35	1.83	1.11
1937	6.23	4.76	4.07	2.19	4.62	1.94	1.21
1938	5.45	4.39	3.78	1.62	4.00	1.68	1.17
1939	5.29	3.99	3.55	1.57	3.85	1.62	1.04
1940	4.96	4.33	3.80	1.90	3.84	1.61	1.04
1941	5.97	4.38	3.90	2.19	4.45	1.87	1.17
1942	6.28	4.57	4.17	2.26	4.67	1.96	1.23
1943	6.41	4.69	4.19	2.31	4.76	2.00	1.23
1944	6.42	4.73	4.17	2.46	4.81	2.02	1.23
1945	6.36	4.72	4.16	2.59	4.81	2.02	1.23
1946	6.40	5.38	4.84	3.08	5.12	2.15	1.43
1947	8.45	7.14	6.44	4.48	6.89	2.89	1.97
1948	10.21	9.62	8.94	5.90	8.70	3.65	2.63
1949	10.39	8.36	7.34	3.10	7.64	3.21	2.60
1950	10.77	8.76	7.79	4.10	8.22	3.45	2.59
1951	11.26	9.31	8.43	4.47	8.70	3.65	2.58
1952	11.25	9.38	8.40	3.76	8.48	3.56	2.58
1953	11.79	9.40	8.45	3.59	8.71	3.66	2.71
1954	11.43	9.55	8.71	3.92	8.68	3.64	2.82
1955	11.42	9.76	9.02	4.66	8.95	3.76	2.81
1956	11.55	10.26	9.48	5.34	9.31	3.91	2.82
1957	12.06	10.64	9.95	6.03	9.86	4.14	3.09
1958	11.61	9.87	9.12	4.56	9.03	3.79	3.03
1959	11.57	10.14	9.36	4.70	9.11	3.83	2.95
1960	11.69	10.01	8.93	4.86	9.14	3.84	2.94
1961	11.72	10.41	9.31	4.82	9.22	3.87	2.95
1962	11.55	10.34	9.27	4.67	9.08	3.82	2.96
1963	11.33	10.44	9.32	4.57	8.96	3.76	2.95
1964	11.29	9.71	8.62	4.56	8.79	3.69	2.93
1965	11.56	10.15	9.00	4.82	9.08	3.81	2.93
1966	11.55	10.41	9.13	4.72	9.08	3.81	2.95
1967	11.76	11.00	9.74	4.55	9.26	3.89	3.00
1968	11.50	11.09	9.81	4.33	9.08	3.81	3.02
1969	11.82	11.03	9.89	4.34	9.25	3.88	3.18
1970	12.57	11.59	10.32	6.35	10.32	4.33	3.26
1971	12.81	12.18	10.66	7.55	10.88	4.57	3.47
1972	12.75	12.14	10.58	7.36	10.78	4.53	3.47
1973	14.83	13.64	12.47	8.48	12.51	5.25	3.99
1974	25.10	24.00	22.20	21.62	23.57	9.90	7.10
1975	30.23	27.61	25.98	23.06	27.31	11.47	7.93
1976	33.71	31.42	29.80	22.24	29.57	12.42	8.50
1977	36.83	36.33	34.57	25.99	33.21	13.95	8.83
1978	38.78	38.00	36.04	23.46	33.73	14.17	9.80
1979	56.29	56.51	53.96	32.63	48.85	20.52	13.20
1980	87.04	80.66	78.12	44.34	72.57	30.48	22.67
1981	101.56	102.36	98.75	61.84	89.26	37.49	34.92
1982	94.41	99.03	92.51	57.30	83.20	34.94	31.72
1983	87.64	87.03	80.77	56.36	77.19	32.42	29.34
1984	81.10	87.29	80.78	58.20	74.49	31.29	28.95
1985	80.87	82.82	76.53	54.73	72.48	30.44	26.59
1986	46.58	51.07	44.80	36.56	43.53	18.28	14.66
1987	52.73	57.76	52.13	45.96	50.86	21.36	17.45
1988	49.69	51.67	45.89	38.18	45.76	19.22	14.58
1989	58.34	60.95	55.00	38.87	52.13	21.89	17.78

Sources: Petroleum product prices from IPAA.
Crude oil wellhead prices derived from Energy Information Administration.

Notes: Data reflect price trends only, not actual sale prices.
Motor gasoline prices represent leaded fuel prior to 1982, and unleaded thereafter.

Refiner Acquisition Cost of Crude Oil

($/bbl.)	Domestic	Imported	Composite
1970	3.46	2.96	3.40
1971	3.68	3.17	3.60
1972	3.67	3.22	3.58
1973	4.17	4.08	4.15
1974	7.18	12.52	9.07
1975	8.39	13.93	10.38
1976	8.84	13.48	10.89
1977	9.55	14.53	11.96
1978	10.61	14.57	12.46
1979	14.27	21.67	17.72
1980	24.23	33.89	28.07
1981	34.33	37.05	35.24
1982	31.22	33.55	31.87
1983	28.87	29.30	28.99
1984	28.53	28.88	28.63
1985	26.66	26.99	26.75
1986	14.82	14.00	14.55
1987	17.76	18.13	17.90
1988	14.74	14.56	14.67
1989	17.87	18.08	17.97
1990	22.60	21.78	22.23

Source: Energy Information Administration

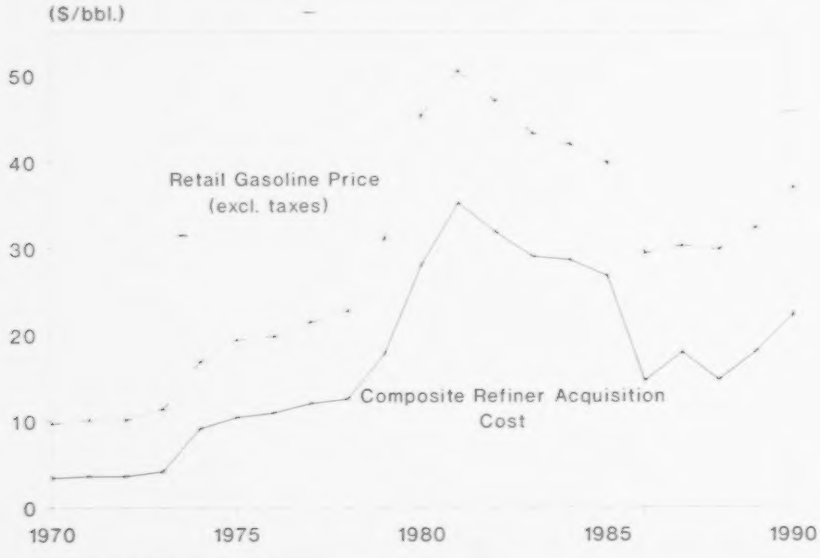
Retail Gasoline Prices

(c/gal.)	Excluding Taxes	Taxes	Pump Price
1972	24.31	11.13	35.44
1973	26.93	11.20	38.13
1974	40.40	11.30	51.70
1975	45.67	11.31	56.98
1976	47.48	11.45	58.93
1977	50.82	11.52	62.34
1978	53.06	11.57	64.63
1979	73.38	11.71	85.09
1980	107.07	11.83	118.90
1981	119.91	13.01	132.92
1982	111.29	14.23	125.52
1983	102.69	19.19	121.88
1984	99.57	21.14	120.71
1985	93.91	21.86	115.77
1986	69.57	22.10	91.67
1987	72.12	23.28	95.40
1988	70.59	23.93	94.52
1989	76.82	24.50	101.32
1990	87.46	25.83	113.29

Source: *Oil and Gas Journal*

Note: Prices represent regular leaded prior to 1985, and regular unleaded thereafter.

Crude Oil Prices vs. Gasoline Prices



Source: EIA, Oil & Gas Journal

Consumption

Petroleum Consumption

(thous. bbls.)	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Alabama	83,890	85,887	83,867	79,266	84,791	83,088	92,551	101,759	103,890	109,107
Alaska	22,919	24,077	26,511	31,115	35,463	39,763	42,654	36,451	38,270	40,890
Arizona	55,350	52,458	54,661	53,580	58,065	58,807	62,228	63,681	64,538	65,399
Arkansas	57,426	54,900	53,378	53,810	55,933	56,060	57,492	54,443	56,560	57,773
California	620,316	574,667	519,314	540,361	578,238	561,286	586,109	602,028	633,235	642,713
Colorado	61,167	56,698	58,289	60,021	61,846	61,089	62,799	61,999	62,515	60,023
Connecticut	89,026	78,642	77,893	76,310	79,459	76,790	79,996	79,205	84,612	86,154
Delaware	33,564	25,139	22,025	21,821	22,493	21,494	22,294	22,440	24,953	24,363
Dist.of Columbia	8,455	7,247	8,123	7,801	8,203	6,894	8,051	7,386	7,451	7,541
Florida	293,268	289,958	255,387	255,759	236,631	236,685	266,370	260,392	280,444	280,741
Georgia	129,922	123,311	120,839	127,828	134,468	138,710	139,797	145,832	152,886	148,885
Hawaii	43,505	38,721	35,637	36,297	36,932	39,351	38,905	39,470	44,500	50,232
Idaho	20,731	18,294	17,861	18,664	19,103	19,520	19,533	19,999	20,526	21,609
Illinois	274,168	244,746	224,305	228,624	218,378	219,025	224,980	231,382	244,193	215,295
Indiana	136,518	128,946	119,904	118,971	136,819	136,176	144,306	150,047	146,683	151,035
Iowa	71,764	65,219	67,257	63,517	65,839	66,759	66,645	61,137	63,924	62,509
Kansas	70,100	63,874	65,860	66,813	83,942	79,434	78,255	77,761	85,300	81,564
Kentucky	96,697	82,919	81,530	84,815	87,228	85,981	85,747	90,185	96,539	99,083
Louisiana	296,302	295,536	287,807	276,207	258,617	260,869	264,899	276,165	291,987	272,154
Maine	34,919	34,060	39,843	31,370	32,786	33,817	38,570	38,376	45,307	40,173
Maryland	94,234	88,440	84,451	86,782	88,478	84,454	85,683	89,923	93,034	98,596
Massachusetts	159,462	150,204	141,308	133,434	135,698	134,413	149,302	145,900	149,597	150,040
Michigan	177,332	156,997	143,524	142,979	154,358	162,172	169,561	172,872	181,228	180,008
Minnesota	92,848	83,643	87,128	85,968	92,665	92,224	94,565	90,942	94,922	94,442
Mississippi	68,262	63,872	57,664	56,950	60,628	61,961	72,589	69,449	80,167	85,127
Missouri	111,687	105,442	106,069	102,338	106,441	108,570	112,141	114,175	119,813	119,614
Montana	29,110	25,783	23,661	26,741	27,292	28,885	24,727	24,698	25,670	27,749
Nebraska	36,045	33,502	35,239	37,075	36,119	36,792	37,188	38,614	42,010	39,825
Nevada	26,715	24,088	23,699	25,467	25,065	25,105	26,225	28,527	30,596	32,279
New Hampshire	24,174	22,227	20,942	20,592	22,822	22,328	26,507	28,406	29,032	30,134
New Jersey	234,839	223,017	224,432	219,109	228,463	216,305	229,250	228,999	229,901	229,968
New Mexico	38,074	39,441	34,799	38,165	43,848	40,082	38,352	39,456	39,616	44,369
New York	378,801	340,149	315,196	286,505	264,297	385,360	303,225	313,490	322,926	314,386
North Carolina	123,429	115,294	112,792	119,187	124,492	123,719	133,050	138,600	145,190	137,150
North Dakota	23,162	23,086	22,448	22,546	22,362	21,501	22,497	21,623	21,704	21,939
Ohio	257,880	237,624	223,658	219,571	218,741	216,475	207,784	213,432	212,077	219,763
Oklahoma	82,525	81,013	83,013	85,899	86,106	87,758	78,455	77,084	80,018	81,902
Oregon	60,623	60,227	61,111	55,862	57,754	57,186	59,183	60,427	63,232	63,329
Pennsylvania	260,836	238,908	218,924	222,665	224,047	216,262	223,941	231,924	236,925	235,887
Rhode Island	18,620	16,701	16,279	16,688	17,415	19,219	19,918	20,371	21,139	19,054
South Carolina	67,220	64,480	59,836	61,813	64,114	64,381	66,467	68,108	69,197	72,342
South Dakota	19,362	17,487	18,477	17,574	17,676	18,532	19,210	19,888	19,923	21,894
Tennessee	97,425	94,882	92,231	90,620	100,534	103,239	108,332	110,762	107,991	110,359
Texas	790,240	773,505	744,498	748,115	818,299	804,582	799,555	847,062	874,210	880,963
Utah	36,113	30,910	30,715	32,421	33,771	33,703	36,045	37,339	37,417	36,842
Vermont	11,242	10,724	9,878	10,717	11,157	11,769	11,957	13,127	13,687	13,797
Virginia	139,213	121,287	112,911	116,381	120,813	122,385	130,911	137,123	142,513	140,714
Washington	104,982	105,803	103,032	94,362	102,634	105,388	120,346	123,552	127,235	135,364
West Virginia	57,530	54,429	47,812	46,639	46,254	45,254	45,904	47,702	49,261	50,577
Wisconsin	89,080	83,835	82,952	81,884	85,652	85,803	86,104	85,126	92,469	93,486
Wyoming	31,374	28,766	26,965	21,366	22,349	22,734	21,272	23,902	24,679	24,535
TOTAL U.S.	**6,242,446**	**5,861,065**	**5,582,935**	**5,559,365**	**5,755,578**	**5,740,139**	**5,942,427**	**6,082,741**	**6,325,692**	**6,323,677**

Sources: Energy Information Administration

Natural Gas Consumption

(MMcf)	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Alabama	247,289	220,087	203,687	213,516	202,901	187,654	189,112	217,586	225,178	215,108
Alaska	106,207	143,395	141,116	140,535	143,470	127,812	130,478	132,017	127,414	115,481
Arizona	157,993	116,536	102,807	107,434	112,228	88,587	100,517	106,017	127,177	101,771
Arkansas	252,553	213,187	194,079	193,694	174,991	184,148	151,856	197,208	228,392	212,535
California	1,789,444	1,647,535	1,502,575	1,633,122	1,806,398	1,496,008	1,889,118	1,762,480	1,799,042	1,816,984
Colorado	197,998	202,482	195,700	211,752	200,976	181,770	189,364	208,087	218,766	222,329
Connecticut	76,732	77,591	74,211	80,924	77,864	78,264	90,867	87,592	94,487	94,241
Delaware	30,640	27,799	34,873	42,957	38,488	33,005	36,669	29,253	34,919	38,860
Dist. of Columbia	29,023	28,922	28,952	29,054	28,526	29,229	30,728	32,483	33,174	29,046
Florida	324,414	310,076	293,623	291,128	278,666	278,439	288,317	282,792	310,493	330,856
Georgia	308,949	287,463	289,574	301,331	276,446	273,799	297,249	316,105	309,970	304,694
Hawaii	2,899	2,804	2,669	2,375	2,483	2,463	2,610	2,614	2,694	2,751
Idaho	41,034	36,870	32,412	34,977	36,243	32,110	33,583	36,646	40,679	38,357
Illinois	1,049,787	974,545	923,921	1,017,180	946,614	911,974	863,261	952,529	978,413	879,257
Indiana	487,670	459,114	421,252	446,210	428,124	389,312	406,661	447,542	453,526	439,063
Iowa	242,357	228,229	212,587	224,314	215,553	199,640	194,914	228,538	215,294	212,025
Kansas	360,833	317,259	276,262	287,328	274,900	241,346	252,726	264,539	254,362	275,191
Kentucky	174,550	159,446	151,187	162,985	149,102	140,704	147,258	160,332	165,562	153,131
Louisiana	1,522,261	1,156,364	1,090,109	1,241,850	1,086,006	1,149,230	1,147,961	1,116,676	1,227,060	1,300,439
Maine	2,321	2,617	2,419	2,444	2,520	2,465	2,629	3,191	3,672	3,955
Maryland	172,915	155,507	143,527	156,868	148,589	150,477	166,428	170,326	187,512	169,719
Massachusetts	183,900	193,506	190,782	207,564	217,503	184,727	225,701	208,998	247,205	251,063
Michigan	783,775	725,050	680,452	698,672	690,493	648,981	635,568	722,598	749,612	686,491
Minnesota	256,094	253,359	236,401	249,040	251,243	237,361	233,532	272,585	287,997	270,251
Mississippi	198,396	224,857	203,222	228,840	195,058	179,610	168,075	171,168	188,597	234,109
Missouri	277,914	274,897	254,823	259,904	255,636	238,144	229,960	248,022	256,105	237,936
Montana	48,533	47,887	42,634	42,914	42,879	37,272	34,687	37,587	41,575	38,179
Nebraska	132,059	132,933	125,134	129,745	120,496	100,762	104,838	117,234	115,293	107,359
Nevada	72,584	46,303	41,830	42,173	39,087	33,746	41,161	48,031	62,950	62,630
New Hampshire	10,154	9,993	9,635	10,506	10,545	10,269	11,951	12,987	13,925	13,570
New Jersey	389,458	374,702	404,398	415,852	376,982	350,632	418,018	411,415	453,110	404,583
New Mexico	134,220	113,564	100,727	101,869	78,453	72,830	79,406	94,650	101,126	96,123
New York	756,522	770,665	716,488	784,243	758,031	724,481	771,003	784,673	839,957	853,778
North Carolina	146,223	135,482	130,792	138,228	129,081	130,787	143,500	146,790	156,105	150,788
North Dakota	20,512	24,374	21,368	25,109	22,682	21,189	18,672	22,876	24,959	22,441
Ohio	855,704	795,963	732,686	767,095	719,393	702,851	697,895	790,436	799,852	701,729
Oklahoma	592,220	556,481	525,165	533,712	473,906	448,808	467,942	460,130	468,488	452,804
Oregon	71,914	67,412	64,042	75,958	78,297	67,349	72,143	78,996	99,448	98,503
Pennsylvania	749,354	660,195	611,203	636,987	588,087	572,209	594,317	626,688	649,804	602,465
Rhode Island	29,086	27,702	28,884	31,557	29,733	26,270	35,865	30,668	33,821	35,115
South Carolina	138,728	95,220	98,998	105,842	95,225	96,175	103,273	109,817	114,237	129,768
South Dakota	21,990	24,910	23,138	24,412	24,881	23,114	20,837	23,974	25,263	23,294
Tennessee	205,979	190,520	183,608	193,489	179,942	174,333	185,200	197,095	203,588	194,185
Texas	3,319,594	2,943,812	2,828,001	2,998,055	2,985,916	2,801,490	2,866,540	3,104,559	3,225,961	3,549,930
Utah	101,007	110,615	104,429	106,188	104,915	90,784	80,494	90,702	96,288	93,990
Vermont	4,383	4,366	4,354	4,862	4,993	5,014	5,181	5,551	6,145	7,095
Virginia	140,663	139,840	135,611	136,757	134,589	135,725	151,860	154,756	167,450	163,483
Washington	122,658	106,942	105,639	124,435	131,712	116,389	127,965	142,825	158,420	151,070
West Virginia	130,713	110,220	100,715	101,023	92,218	89,533	94,065	100,595	110,452	102,907
Wisconsin	316,501	308,039	296,345	302,106	305,571	275,112	275,958	312,832	326,613	302,512
Wyoming	45,228	57,597	47,578	45,775	42,495	39,348	34,290	36,005	36,633	39,238
TOTAL U.S.	**17,833,935**	**16,295,234**	**15,366,624**	**16,344,890**	**15,811,130**	**14,813,731**	**15,542,243**	**16,319,791**	**17,098,767**	**17,033,18**

Source: Energy Information Administration

Notes: Data represent natural gas delivered to all consumers.

Industry Employment—1990

	MINING	REFINING		TRANSPORTATION		WHOLESALE	RETAIL	TOTAL
	Oil and Gas Extraction	Petroleum Refining	Oils and Greases	Pipelines, Except Gas	Gas Distribution	Petroleum Products	Gasoline Stations	INDUSTRY
Alabama	2,980	387	50	82	2,827	5,620	10,317	22,263
Alaska	10,257	308	22	1,095	237	656	1,104	13,679
Arizona	106	N/A	N/A	129	1,724	1,314	9,545	12,818
Arkansas	2,588	475	N/A	274	2,223	2,305	5,893	13,758
California	30,972	23,547	909	1,295	11,524	13,188	62,217	143,652
Colorado	12,599	471	46	155	2,145	2,366	9,514	27,296
Connecticut	40	0	52	0	2,509	1,773	8,768	13,142
Delaware	13	767	11	3	319	223	1,508	2,844
Dist. of Columbia	241	40	N/A	0	626	184	849	1,940
Florida	514	17	285	67	2,327	7,501	30,348	41,059
Georgia	77	87	109	517	4,282	6,674	18,475	30,221
Hawaii	N/A	477	0	0	N/A	781	3,353	4,611
Idaho	5	0	0	20	353	1,450	3,684	5,512
Illinois	3,362	7,623	1,360	901	8,087	10,720	26,854	58,907
Indiana	512	2,253	344	389	2,681	3,481	20,013	29,673
Iowa	31	18	180	191	1,092	2,791	14,103	18,406
Kansas	8,447	1,945	355	2,197	2,526	2,606	9,155	27,231
Kentucky	1,828	3,422	71	136	2,897	3,206	12,553	24,113
Louisiana	53,700	10,500	655	1,015	5,791	5,611	8,271	85,543
Maine	21	0	0	67	73	1,243	4,249	5,653
Maryland	28	N/A	253	N/A	1,128	2,925	12,917	17,251
Massachusetts	9	N/A	429	15	5,163	2,653	14,209	22,478
Michigan	3,880	687	811	278	6,694	5,949	26,475	44,774
Minnesota	70	N/A	137	217	2,242	2,833	18,803	24,302
Mississippi	5,376	1,733	153	222	2,030	2,557	7,140	19,211
Missouri	74	N/A	308	206	3,950	5,809	21,511	31,858
Montana	1,698	775	0	86	370	1,209	3,485	7,623
Nebraska	459	N/A	N/A	75	1,387	2,479	7,508	11,908
Nevada	205	0	0	9	872	2,229	4,312	7,627
New Hampshire	0	0	28	3	298	384	3,021	3,734
New Jersey	96	6,633	1,035	143	2,364	3,670	18,431	32,372
New Mexico	9,955	589	32	237	2,556	2,246	4,819	20,434
New York	1,583	2,100	417	142	6,627	7,977	28,056	46,902
North Carolina	61	N/A	307	116	3,014	5,786	10,794	20,078
North Dakota	2,883	231	107	134	872	2,061	2,514	8,802
Ohio	5,819	7,112	630	676	7,371	6,561	35,219	63,388
Oklahoma	41,857	4,506	633	1,177	5,465	4,777	8,262	66,677
Oregon	42	N/A	78	N/A	1,426	2,308	8,954	12,808
Pennsylvania	3,500	9,200	800	700	8,100	8,100	28,200	58,600
Rhode Island	N/A	0	0	N/A	958	399	2,270	3,627
South Carolina	28	N/A	N/A	N/A	589	3,310	7,817	11,744
South Dakota	108	0	0	51	125	1,564	2,924	4,772
Tennessee	228	410	55	43	1,885	5,915	12,978	21,514
Texas	171,709	26,389	1,028	4,475	27,970	23,027	32,530	287,128
Utah	2,139	897	3	71	2,238	1,059	6,014	12,421
Vermont	N/A	N/A	N/A	N/A	109	389	2,119	2,617
Virginia	254	272	N/A	N/A	2,938	8,770	16,783	29,017
Washington	237	1,927	N/A	121	N/A	2,566	10,752	15,603
West Virginia	4,591	273	210	79	4,940	1,179	5,311	16,583
Wisconsin	N/A	N/A	N/A	200	2,642	3,952	18,277	25,071
Wyoming	8,941	1,011	6	223	980	731	3,537	15,429
TOTAL U.S.	**394,123**	**117,082**	**11,909**	**18,232**	**161,546**	**199,067**	**646,715**	**1,548,674**

Source: Various state government agencies

Note: Data differ from the Bureau of labor Statistics national averages due to confidentiality rules.

State Rankings

Crude Oil Revenues	Natural Gas Revenues	Crude Oil Production	Natural Gas Production
1 Texas	1 Texas	1 Texas	1 Texas
2 Alaska	2 Louisiana	2 Alaska	2 Louisiana
3 Louisiana	3 Oklahoma	3 Louisiana	3 Oklahoma
4 California	4 New Mexico	4 California	4 New Mexico
5 Oklahoma	5 Kansas	5 Oklahoma	5 Wyoming
6 Wyoming	6 Wyoming	6 Wyoming	6 Kansas
7 New Mexico	7 California	7 New Mexico	7 Alaska
8 Kansas	8 West Virginia	8 Kansas	8 California
9 North Dakota	9 Alaska	9 North Dakota	9 Colorado
10 Colorado	10 Michigan	10 Colorado	10 West Virginia
11 Utah	11 Ohio	11 Utah	11 Arkansas
12 Mississippi	12 Pennsylvania	12 Mississippi	12 Pennsylvania
13 Illinois	13 Colorado	13 Illinois	13 Michigan
14 Michigan	14 Arkansas	14 Montana	14 Ohio
15 Montana	15 Utah	15 Michigan	15 Utah
16 Alabama	16 Alabama	16 Alabama	16 Alabama
17 Ohio	17 Mississippi	17 Arkansas	17 Mississippi
18 Arkansas	18 Kentucky	18 Ohio	18 Kentucky
19 Nebraska	19 Montana	19 Nebraska	19 North Dakota
20 Kentucky	20 North Dakota	20 Florida	20 Montana
21 Florida	21 New York	21 Kentucky	21 New York
22 Indiana	22 Virginia	22 Nevada	22 Virginia
23 Nevada	23 Florida	23 Indiana	23 Florida
24 Pennsylvania	24 South Dakota	24 Pennsylvania	24 South Dakota
25 West Virginia	25 Oregon	25 West Virginia	25 Oregon
26 South Dakota	26 Tennessee	26 South Dakota	26 Tennessee
27 Tennessee	27 Illinois	27 Tennessee	27 Illinois
28 New York	28 Arizona	28 New York	28 Arizona
29 Missouri	29 Nebraska	29 Missouri	29 Nebraska
30 Arizona	30 Indiana	30 Arizona	30 Indiana
31 Virginia	31 Maryland	31 Virginia	31 Maryland
	32 Missouri		32 Missouri

Sources: Energy Information Administration and IPAA.

Glossary

Abandonments - The number of producing wells that have been abandoned during a given time period.

Artificial Lifting - Any method used to stimulate the production of crude oil and/or natural gas in excess of the flow resulting under natural reservoir pressures, e.g. pumping, secondary or tertiary recovery.

Barrel - Standard volumetric measure for petroleum, equivalent to 42 U.S. gallons.

Chase Bank Group - A group of the largest U.S. petroleum companies from which Chase Manhattan Bank gathers annual financial and operating data. All other domestic petroleum companies in the industry are aggregated to represent the independent sector.

Condensate - A mixture of liquid hydrocarbons at atmospheric conditions which occur in a gaseous state underground, sometimes known as distillate or natural gasoline.

Crude Oil - Hydrocarbons in liquid unprocessed form that vary significantly in properties such as API gravity, viscosity, and sulfur content.

Development Well - A crude oil, natural gas or dry hole drilled within an area known to be productive.

Distillate Fuel Oil - One of the petroleum fractions produced by conventional distillate, includes fuel oil and diesel fuel.

Dry Hole - A completed well which is not productive of crude oil and/or natural gas in commercial quantities.

Dry Natural Gas - Natural gas that does not contain dissolved liquid hydrocarbons.

Exploratory Well - A crude oil, natural gas, or dry hole drilled to discover a petroleum formation or its limits.

Gas Well - An exploratory or development well completed for the production of natural gas.

Liquefied Petroleum Gas (LPG) - Butane, propane, and other light products separated from natural gasoline or crude oil by fractionation or other processes. At atmospheric pressure, it reverts to the gaseous state.

Middle Distillates - A general classification of petroleum products that includes distillate fuel oil and kerosene.

Natural Gas - Hydrocarbons in gaseous form or mixed with crude oil.

Natural Gas Liquids (NGL) - Hydrocarbons found with natural gas that are recoverable by condensation or absorption, such as LPG or natural gasoline.

Oil Well - An exploratory or development well completed for the production of crude oil.

Petroleum - Includes in its broadest sense the entire spectrum of hydrocarbons - gaseous, liquid, and solid.

Pipeline - A line of tubes with pumping machinery that transports crude oil or natural gas from the wellhead to the storage tank or petroleum refinery.

Proved Reserves - The estimated quantity of crude oil, natural gas, or NGL that is shown with reasonable certainty to be recoverable from known fields under existing economic and operating conditions.

Residual Fuel Oil - The heavy, high-viscosity leftover from the refining process, used mainly for industrial purposes.

Rotary Drilling Rig - A derrick equipped with modern rotary equipment capable of drilling a bore hole with a bit attached to a rotating column of steel pipe, in contrast to a cable tool rig which drills on the percussion principle.

Seismic Exploration Activity - The search for geological structures which are potential petroleum-bearing formations by interpreting data from seismic shocks.

Severance Tax - A tax levied by some states on each barrel of crude oil or each thousand cubic feet of natural gas produced.

Strategic Petroleum Reserve - Crude oil inventories held in government underground storage for use during periods of supply interruptions.

Stratigraphic Test - A hole drilled to gather information about a stratigraphic formation such as the general permeability and porosity of the rocks; includes core tests.

Stripper Well - A producing well which pumps or "strips" less than 10 barrels of crude oil or 60 Mcf of natural gas per day.

Stripper Well Reserves - The estimated amount of additional crude oil or natural gas which can be recovered by primary means or secondary recovery methods.

Well - A hole drilled to find or produce hydrocarbons, or to provide services related to their production.

Wet Natural Gas - Volumes of natural gas remaining after removal of lease condensate, and after exclusion of nonhydrocarbon gases where they occur in sufficient quantity to render the gas unmarketable.

Wildcat Well - A type of exploratory well drilled in an unproven area where there has been no previous production.

Peak Year Milestones

Seismic Crew Months Worked	1952	7,958	
Rotary Rigs Active	1981	3,970	
New-field Wildcat Wells Drilled	1981	9,151	
Exploratory Wells Drilled	1981	17,430	
Oil Wells Drilled	1984	43,967	
Gas Wells Drilled	1981	19,742	
Dry Holes Drilled	1981	26,972	
Total Wells Drilled	1981	91,600	
Total Footage Drilled	1981	412,310	thous. ft.
Producing Oil Wells	1985	646,626	
Producing Gas Wells	1990	264,558	
Crude Oil Production	1970	9,637	thous. b/d
Stripper Well Production	1961	1,622	thous. b/d
Petroleum Imports	1977	8,787	thous. b/d
Petroleum Demand	1978	18,847	thous. b/d
Natural Gas Marketed Production	1973	22,648	Bcf
Natural Gas Consumption	1972	22,101	Bcf
Oil Wellhead Price	1981	$31.77	per bbl.
Natural Gas Wellhead Price	1984	$2.66	per Mcf
Natural Gas Imports	1990	1,512	Bcf
Crude Oil Wellhead Value	1981	99,401	mill. $
Natural Gas Wellhead Value	1984	48,492	mill. $
Severance Taxes Paid	1982	7,133	mill. $
Total Drilling Costs	1982	39,428	mill. $
Total Employment	1981	1.9	mill.

Advertisers Index

1. Ariel Corp. 103
2. B.J. Services .... Cover 4
3. Citgo Petroleum Corp. 112
4. Coastal Trading 9
5. Deloitte & Touche 10
6. Halliburton Services 15
7. Halliburton .... Cover 3
8. Houston Engineers 7
9. Mobil Natural Gas 3
10. Schlumberger .... Cover 2

IPAA Meetings

1991 Annual Meeting ✓
October 12-15—Marriott City Center
Denver

1992 Executive Committee Meeting
Feb. 3-5—Hyatt Capitol Hill
Washington, D.C.

1992 Midyear Meeting
May 6-9—Buena Vista Palace
Orlando

1992 Annual Meeting
Oct. 17-20—Bally's
Reno

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Industry Suppliers:

Managing Quality

By Gilbert H. Tausch
President and CEO, Camco International, Inc.
Chairman, Petroleum Equipment Suppliers Association

The Petroleum Equipment Suppliers Association has recently focused much of its attention on TQM (Total Quality Management) programs. We have heard from producers about how they are implementing quality programs within their own organizations. Based on the positive results they are seeing, they tell us to be prepared for quality to become an increasingly important factor in the bid process.

PESA members provide products and services in every state where oil and gas activity is found. Our 1991 Service Point Directory, as published in the July issue of *Petroleum Independent*, lists nearly 3,500 facilities in the United States, including regional and local sales offices, manufacturing plants, supply stores, warehouses, service bases, etc.

But wherever the location, many of our members provide equipment and services that must accommodate a wide spectrum of operating environments. These range from the extreme temperatures encountered on Alaska's North Slope to the sour gas and chlorides found in the Rocky Mountains, the deep sour wells of Mississippi and offshore operations in the Gulf of Mexico.

> ***PESA will be offering a number of programs this year that apply the principles of quality management to a number of aspects of doing business in our industry, including safety performance and environmental compliance.***

In addition to technology and price, suppliers must often compete in terms of the total service provided to their customers.

The term "quality" has been widely used and abused, but that does not diminish its importance to PESA members and their customers. The "Quality" in TQM goes beyond that of the end product or service (e.g., conformance to customer specifications, performance reliability, etc.) to include all aspects of the customer relationship, such as prompt and responsive communications, quotations, technical presentations, project documentation, ontime delivery, invoicing, etc. These programs allow IPAA members throughout the country to do business with suppliers with greater ease and confidence.

Many of our members are now involved with TQM programs to varying degrees and at different stages of implementation. Some are following the precepts of quality "gurus" such as Deming and Crosby; some are bringing in outside consultants; while others are developing their own programs internally. Some companies are just beginning to evaluate their operations and to determine where their needs lie; others have had programs in place for years.

All agree, however, that effective quality programs must be customized to the specific organization and company culture. And they require extensive training throughout the organization, covering operations and management as well as technology.

Quality programs focus on improving internal processes and systems. The external customer may not ever be aware of the specific changes, but he should see the results of their cumulative impact. In PESA member companies where quality programs are being implemented, employees are often given the freedom to check their own processes and define their methods of operation. They identify who their customers actually are—including "internal customers" such as the next machinist to work on a component, or the salesman handling the project.

When management throws its full support behind the process, and gives employees accountability and responsibility, eventually every member of the company participates in satisfying the ultimate customer. And along the way, as processes and systems are improved and refined, waste and rework are reduced; this savings goes directly to the bottom line.

Producing better products and services at a lower cost is the most tangible benefit to the supplier. Building a team of more productive employees who are committed to their customers' needs is perhaps the most far-reaching.

A number of producers involve their suppliers as part of their own quality teams. In turn, suppliers with successful quality programs consider their customers' overall requirements as their definition of quality, and likewise include them in their process.

There are several external measures of performance in our industry today which, while they may not be directly relevant to all IPAA members, do define a type of quality program. For example, many of our members have *OCS certification*, which addresses quality assurance of materials and documentation of all steps in the manufacturing, testing and assembly stages, thus assuring repeatability of product performance.

Another growing influence is the *ISO 9001* certificate of quality which assures that proper and workable systems are utilized. A number of our members have obtained this certification in order to provide products and services in Europe.

The criteria for the Malcolm Baldrige National Quality Award provide a valuable tool which can be used for self-assessment. They help companies identify the strengths and weaknesses of their systems and techniques. At a recent meeting in which we heard from several past winners of the Baldrige Award and that program's director, it was emphasized that the award should be viewed as more than a competition: it offers a process of evaluation which becomes a guideline for the way to run a business.

PESA will be offering a number of programs this year that apply the principles of quality management to a number of aspects of doing business in our industry, including safety performance and environmental compliance. We see quality programs as a win/win proposition for both oilfield equipment suppliers and our customers.

Contributions to the Suppliers Column are provided by members of the Petroleum Equipment Suppliers Association.

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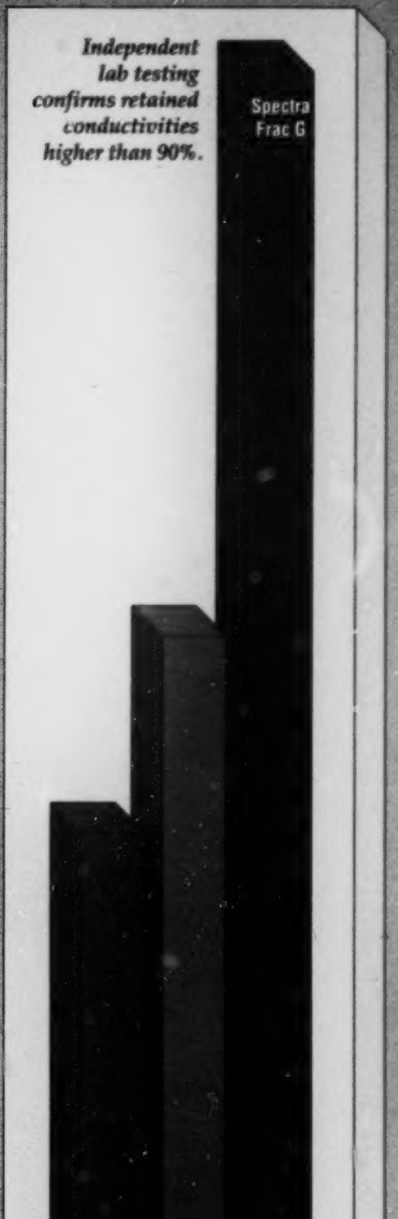

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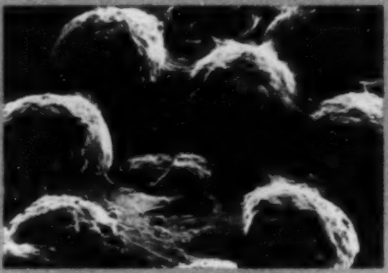

A proppant pack after exposure to a typical organometallic crosslinked fluid.

A proppant pack after treatment with Spectra Frac G.

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